DOCUMENT RESUME

ED 197 153		CE 027 782

AUTHOR	Leland, Lyle
TITLE	Mountain Plains Learning Experience Guide: Carpentry. Course: Finish.
INSTITUTION	Mountain-Plains Education and Economic Development Program, Inc., Glasgow AFB, Mont.
SPONS AGENCY	Office of Vocational and Adult Education (ED), Washington, D.C.
BUREAU NO	498MH90008
PUB DATE	Sep 75
CONTRACT	300-79-0153
NOTE	410p.: Some pages will not reproduce well due to light print. For related documents, see CE 027 766 and CE 027 781.
EDRS PRICE	MF01/PC17 Plus Postage.
DESCRIPTORS	Adult Education: Building Trades: *Carpenters: *Construction (Process): Disadvantaged: Family Programs: *Finishing: *Individualized Instruction: Instructional Materials: Learning Activities: Learning Modules: Postsecondary Education: Skilled Occupations: *Vocational Education: *Woodworking
IDENTIFIERS	Mountain Plains Program

ABSTRACT

One of two individualized courses included in a carpentry curriculum, this course is structured to provide the information, procedures, and experiences to complete the carpentry requirements following the framing operation. The course is comprised of five units: (1) Machine Processes, (2) Exterior Wall Coverings and Cornice, (3) Windows and Trim, (4) Interior Coverings, and (5) Door and Jambs. Each unit begins with a Unit Learning Experience Guide that gives directions for unit completion. The remainder of each unit consists of Learning Activity Packages (LAP) that provide specific information for completion of a learning activity. Each LAP is comprised of the following parts: objective, evaluation procedure, resources, procedure, supplemental sheets, study guide, and a LAP test with answers. The course is preceded by a pretest which is designed to direct the student to units and performance activities. (LRA)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED197153

MOUNTAIN PLAINS LEARNING EXPERIENCE GUIDE:

Carpentry.

Course: Finish

CE 027 782

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

File Code: 70.02.00.00.A2-1

Date Published: 9/5/75

Mountain-Plains Education &
Economic Development
Program, Inc.

Glasgow AFB, Montana 59231

Learning Experience Guide

COURSE: FINISH

DESCRIPTION:

The Finish Course is structured to provide the information, procedures and experiences to complete the carpentry requirements following the framing operation. Practice and procedures used by carpenters when finishing the structure are included in the units of this course. The type of activities include instruction of various kinds of interior and exterior wall coverings, installation of windows and trim and hanging of doors.

RATIONALE:

The preparation, assembly and installation of the finishing components for a structure are part of the carpenter's skills. Completing the structure by correctly applying the materials for wall, ceiling and floor covering is the intent of this course.

OBJECTIVES:

Prepare and install interior and exterior finish portions of a structure according to given specifications using appropriate tools and procedures.

PREREQUISITES:

Communication Skills, Level G.

GENERAL INSTRUCTIONS:

This course has five units. Each unit has a Unit Learning Experience Guide (LEG) that gives directions for unit completion. Each unit consists of Learning Activity Packages (LAPs) that provide specific information for completion of a learning activity. Pretesting results direct the student to units and performance activities.

The general procedure for this course is as follows:

(1) Read the assigned unit LEG for this course.
(2) Begin and complete the first assigned LAP.
    a. Take and score the LAP test.
    b. Turn in the LAP test answer sheet.
    c. Determine the reason for any missed items on the LAP test.
    d. Proceed to the next assigned LAP in the unit.
    e. Complete all required LAPs for the unit by following steps (a) through (d).

Principal Author(s):

Lyle Leland

GENERAL INSTRUCTIONS: continued

(3) Take the unit tests as described in the Unit LEG "Evaluation Procedures".
(4) Proceed to the next assigned unit in this course.
(5) Follow steps 1 through 4 for all required units for this course.
(6) Proceed to the next assigned course.

You will work independently unless directed to do otherwise. When questions or problems arise, you are expected to discuss them with the instructor. At all times remember to follow correct safety procedures during the performance activity.

UNIT TITLES:

.01 Machine Processes
.02 Exterior Wall Coverings and Cornice
.03 Windows and Trim
.04 Interior Coverings
.05 Door and Jambs

EVALUATION PROCEDURE:

Course evaluation is by pre and post testing using a multiple-choice type of test.

In this course, the course test is used as a pretest to determine which units, if any, the student may be able to validate. The student is considered validated for a particular unit if 4 out of 5 items are correctly answered for each LAP part on the course pretest and that particular unit does not have a performance test requirement.

For those units with performance test requirements, the student must also satisfactorily complete the performance test to validate that unit. Unit performance tests validation procedures are given in the "Evaluation Procedure" section of the unit Learning Experience Guide (LEG)

The course test will also be taken by the student as a post test to determine any changes resulting from taking all or part of the course.

FOLLOW-THROUGH:

Proceed to the first assigned unit listed on your Student Progress Record (SPR).

RESOURCE LIST

Printed Materials

1. Blueprint Reading and Sketching, Carpentry Trades, Residential. Delmar Publishers, 1957.
2. Cabinetmaking and Millwork. John L. Ferier, Charles A. Bennett Company, Inc., 1970.
3. Carpentry. United Brotherhood of Carpenters and Joiners of America, Carpenters Printing Plant, Washington, D.C., 1950-1970.
4. Modern Carpentry. Willis H. Wagner, Goodheart-Willcox, 1973.
5. Manufacturer's Catalogs (collection of).
6. Manufacturer's Service Manuals (for power equipment used).
7. Manufacturer's Specifications (assortment of).
8. Manufacturer's Directions for Products (collection of).

Audio/Visuals

none

Equipment

1. Bar, flat rip.
2. Bastard, fine mill.
3. Bits, hole cutting.
4. Bits, laminate trimmer.
5. Bits, mortising.
6. Bits, speed (set).
7. Bits, twist (set).
8. Countersink, rosebud.
9. Cutter, platform tile.
10. Drill, electric, hand.
11. Drill press.
12. Gun, caulking.
13. Gun, glue.
14. Hammer, tack.
15. Inclinometer.
16. Jointer.
17. Knife, putty.
18. Miter box.
19. Plane, power, hand.
20. Planer, thickness.
21. Router, portable.
22. Router, trim (plastic laminate).
23. Templates, door hinge.
24. Sander, belt, portable.
25. Sander, disc, stationary.

Student: ______________________ File Code: 70.02.00.00.A2-2

Date: ______________________ Date Published: 8/8/77

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

COURSE TEST: FINISH

70.02.01.01 & 70.02.01.02

1. To insure that saw marks on a bandsaw are cleaned off the work, one must cut:
   a. 1/8" from a layout line.
   b. 1/32" from a layout line.
   c. 1/2" from a layout line.
   d. directly on the layout line.

2. The tilt-adjustment mechanism on the bandsaw tilts the:
   a. top wheel.
   b. bottom wheel.
   c. table.
   d. blade

3. When feeding stock into a thickness planer, the operator should stand:
   a. to one side of the machine.
   b. to one side of the stock.
   c. behind the machine to assure the stock comes through the planer correctly.
   d. directly behind the stock.

4. When using a thickness planer, size of thickness to be cut can be roughly calibrated by:
   a. the thickness gauge.
   b. measuring the distance between the table and the head.
   c. a thickness control valve.
   d. using a trial piece of stock.

5. Which part of the thickness planer holds the stock firmly to the bed after the cut is made?
   a. the pressure bar.
   b. the infeed roll.
   c. the cutterhead.
   d. the chip breaker.

70.02.01.03 & 70.02.01.04

6. The rear table of a jointer is adjusted correctly when:
   a. it is below the height of the knives at their highest point.
   b. it is exactly the same height as the knives at their highest point.
   c. the depth indicator reads 0 degrees.
   d. it is in line with the front table.

70.02.01.03 & 70.02.01.04 (continued)

7. The main function of the jointer's rear table is to:

   a. square the fence for planing square edges.
   b. produce special cuts.
   c. support the stock after it is planed.
   d. set the blades correctly.

8. The part of the jointer which is seldom adjusted is the:

   a. front table.
   b. depth indicator.
   c. rear table.
   d. fence.

9. The part of the disc sander which holds the abrasive paper is the:

   a. motor.
   b. dust shute.
   c. tilting table.
   d. abrasive disc.

10. Before any replacements, adjustments, or inspections are to be done on a disc sander, one must first:

   a. shut off the power.
   b. clean the machine.
   c. check the motor.
   d. find out what is wrong.

70.02.01.05 & 70.02.01.06

11. What is the most distinct advantage of using a radial saw?

   a. it is extremely portable.
   b. all cutting is done from the top, making layout line clearly visible.
   c. it is excellent for cutting curved and irregular shapes.
   d. it is particularly good for fast, convenient, and accurate ripping.

12. Before making any adjustment on a radial saw, the most important thing to do is:

   a. wear safety glasses.
   b. shut off the power.
   c. check the condition of the saw blade.
   d. clean off the table.

13. In a basic woodworking shop, the radial saw is primarily used for:

   a. planing.
   b. crosscutting.
   c. ripping.
   d. rabbeting.

70.02.01.05 & 70.02.01.06 (continued)

14. A groove is a slot cut:

    a. against the grain of the wood.
    b. with the grain of the wood.
    c. at right angles to the edges grain.
    d. diagonally across the grain of the wood.

15. For the reason of safety alone, one should adjust the saw blades so that it clears the top of the stock by about:

    a. 1/8 to 1/4"
    b. 1 to 1/2"
    c. 3/4 to 1"
    d. 1/2 to 5/8"

70.02.01.07

16. Flat, parallel stock is placed between the work (back-up stock) and the table of the drill press to be sure of not drilling into the table and to prevent:

    a. crooked holes.
    b. elliptical holes.
    c. inaccuracy.
    d. splintered holes.

17. Which of the following parts of a drill press is moved up and down either manually or by a gear and rack assembly?

    a. the index pin.
    b. the adjustable lamp.
    c. the universal feed lever.
    d. the lower table or base.

18. Holes required by a job are most accurately drilled by laying out the centers and then scoring the centers with:

    a. a nail.
    b. a knife.
    c. a nail set.
    d. an awl.

19. When using a drill press, the length of a hole can best be gauged by:

    a. moving the head section.
    b. setting the table.
    c. setting the depth stop.
    d. adjusting the stock lock.

70.02.01.07 (continued)

20. The belt and pulley assembly of a drill press is shielded by the:

   a. safety guard.
   b. quill.
   c. belt tension knob.
   d. tilting table.

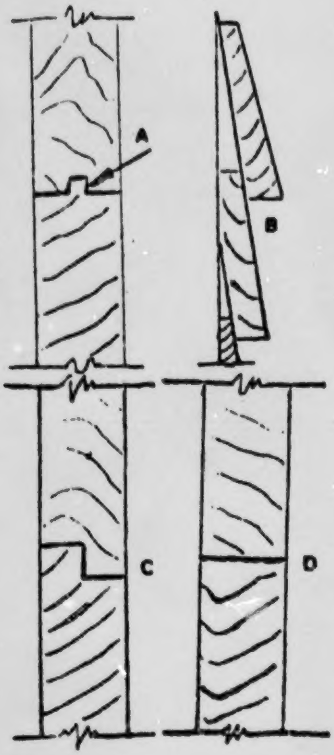
70.02.02.01

21. To fasten siding in place, one should use:

   a. large head stell-wire nails.
   b. brass screws.
   c. noncorrosive nails.
   d. finishing nails.

22. Refer to the figure provided. The definition of type "A" siding is:

   a. rustic.
   b. drop.
   c. bevel.
   d. tongue and groove.



23. A priming coat should be applied to wood siding:

   a. not until the siding has been weathered for six months.
   b. after a rainstorm.
   c. within 30 days.
   d. as soon as possible.

24. Using the figure provided in question 22, give the definition of type "B" siding.

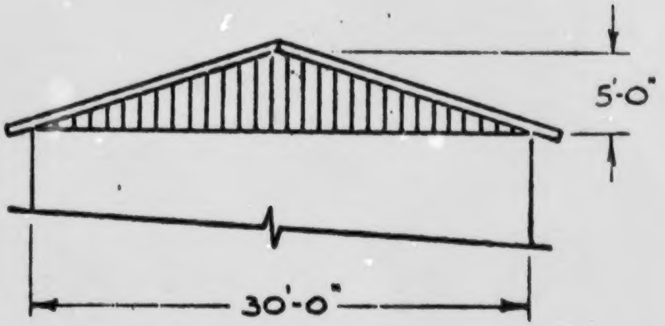
   a. wide beveled.
   b. rustic.
   c. drop.
   d. clap board.

70.02.02.01 (continued)

25. Most deterioration of horizontal wood siding is caused by:

a. weather and decay.
b. heat.
c. insects.
d. sunlight.

70.02.02.02



26. Using the sketch provided, what is the slope?

a. 4/12
b. 3/12
c. 2/12
d. 5/12

70.02.02.03

27. A special tool required to work with non-wood siding is a:

a. drill press.
b. router.
c. belt sander.
d. none.

28. Backer blocks should be constructed from:

a. steel.
b. cement.
c. aluminum.
d. wood.

70.02.02.03 (continued)

29. Refer to the sketch provided in question 26, page 5. What must be installed beneath the vertical gable siding?

a. drip cap.
b. ledger.
c. freeze board.
d. facia board.

30. The bottom edges of vertical siding are usually undercut to form a(n):

a. water drip.
b. air pocket.
c. greater surface area.
d. better appearance.

70.02.02.04

31. Once the siding has been applied, it is important to apply:

a. caulking.
b. sheeting.
c. shingles.
d. spacer strips.

32. Most caulking used in the building trades is applied with a:

a. putty knife.
b. caulking gun.
c. caulking rake.
d. spoon.

33. When using a caulking cartridge for the first time, a craftsman must:

a. note the manufacturer.
b. check its specific gravity.
c. check its pressure rating.
d. cut off the applicator tip.

34. Caulking should only be applied to wood that has been:

a. joined.
b. sanded.
c. primed.
d. butted.

35. Caulking all seams on wooden siding is used as a primary preventive against:

a. decay.
b. wind.
c. dust.
d. insects.

70.02.02.05

36. An important fact to consider when estimating the square footage of wall coverings, is to determine the size difference between nominal and:

a. finished wall coverings.
b. estimated wall coverings.
c. rough-in wall coverings.
d. total wall coverings.

37. In estimating the amount of exterior wall coverings for a given building, a craftsman must first study the:

a. floor plans.
b. plot plan.
c. zoning ordinances.
d. exterior building plans.

38. To determine the amount of covering material needed for a given wall, a craftsman must first multiply the length by the:

a. window sizes.
b. thickness.
c. gable height.
d. height.

39. After obtaining the overall square footage to be covered, a craftsman must then subtract door and window:

a. heights.
b. numbers.
c. areas.
d. lengths.

40. To figure wooden siding needed to cover a gable end, a carpenter must first multiply the length by the height, and then:

a. multiply by four.
b. divide by two.
c. divide by four.
d. multiply by two.

70.02.02.06

41. When using finishing nails, the craftsman should first set the nails, then prime the wood, and then:

a. apply the final finish coat.
b. paint in the nail heads.
c. putty the holes.
d. consider the job complete.

70.02.02.06 (continued)

42. When attaching the soffit, the craftsman should use nails or screws that are:

a. inexpensive.
b. expensive.
c. rust resistant.
d. purchased locally.

43. Wide cornice overhangs provide protection for:

a. gables.
b. studs.
c. walls.
d. rain gutters.

44. A strip nailed to the wall that carries the soffit and lookouts is a:

a. ledger.
b. plancier.
c. facia.
d. trim moulding.

45. The underside enclosed surface of a cornice is called the:

a. sheeting.
b. sheathing.
c. rafter.
d. soffit.

70.02.02.07

46. The main trim member along the edge of the roof is the:

a. lookout.
b. soffit.
c. ledger.
d. facia.

47. One part that makes up a cornice is a:

a. facia.
b. window.
c. shingle.
d. jamb.

70.02.02.08

48. Vent louvers are put into soffits to provide:

a. expansion.
b. air circulation.
c. better appearance.
d. lower construction cost.

70.02.02.08 (continued)

49. A narrow board attached to studding or other vertical members of a frame and adds support to joists is called a:

   a. ribbon.
   b. soffit.
   c. rafter.
   d. facia.

50. Some prefabricated soffit systems use steel channels to provide rigidity, thereby eliminating the need for:

   a. lookouts.
   b. facias.
   c. friezes.
   d. ledgers.

70.02.03.01

51. An awning window consists of:

   a. a sash that is hinged along the bottom and swings inward.
   b. one or more sashes that are hinged at top and swing out at bottom.
   c. series connected horizontal glass slats held by metal frame at each end.
   d. two or more sashes that move horizontally within a window frame.

52. A casement window consists of:

   a. two sashes that slide up and down in a window frame.
   b. two or more sashes that move horizontally within a window frame.
   c. a sash that is hinged on the side and swings outward.
   d. a sash that is hinged along the bottom and swings inward.

53. What are the three basic window classifications?

   a. revolving, fixed, and rotating.
   b. sliding, swinging, and fixed.
   c. swinging, rotating, and revolving.
   d. sliding, rotating, and fixed.

54. The only window not used for ventilation pruposes is a(n):

   a. awning window.
   b. fixed window.
   c. casement window.
   d. jalousie window.

55. Most window frames used in residences are made from:

   a. a magnesium-steel alloy.
   b. ponderosa pine.
   c. aluminum.
   d. steel.

70.02.03.02

The following four questions refer to blueprint in the, "Building Trades Blueprints for Carpenters."

56. How many windows of type #1 are used in this structure?

    a. 12
    b. 10
    c. 9
    d. 11

57. What style of window is type #2?

    a. Andersen "Flexivent".
    b. casement.
    c. double-hung.
    d. fixed sidelight.

58. What size windows are located in the living room?

    a. two 4' - 6" x 3' - 2 3/16" and three 10' - 9" x 4' - 3 1/8".
    b. three 1' - 8" x 3' - 2" and three 3' - 1 3/4" x 3' - 2 3/16".
    c. three 10' - 9" x 6' - 2 1/8" and two 2' - 6" x 3' - 10".
    d. two 10' - 9" x 4' - 3 1/8" and two 2' - 0" x 2' - 6".

59. What style of window is used in the garage?

    a. double-hung.
    b. casement.
    c. Andersen "Flexivent".
    d. fixed sidelight.

60. The dividers used to segment window sash openings are called:

    a. mullions.
    b. stools.
    c. aprons.
    d. muntins.

70.02.03.03

61. What is the minumum spacing required for each side of a window during installation?

    a. 3/4"
    b. 1/8"
    c. 1"
    d. 1/2"

70.02.03.03 (continued)

62. The protective edging around the window pane is called the:

    a. mullion.
    b. jamb.
    c. stool.
    d. sash.

63. Immediately before the final nailing of the window frame, the craftsman should:

    a. place wedge blocks under the sill.
    b. check the operation of the ventilating sash.
    c. drive nails temporarily into the top of the side casing.
    b. plumb the side jambs with a level.

64. A straight strip of wood used for various vertical reference heights is called a:

    a. story pole.
    b. tape measure.
    c. thermopane.
    d. mullion.

65. Why is it best to install windows consisting of two layers of glass separated by an air space?

    a. increases visibility.
    b. provides greater strength to the window area.
    c. prolongs the life of the glass surface.
    d. reduces heat loss in winter and heat gain in summer.

70.02.03.04

66. The plate glass of large insulating units are usually:

    a. 1/4" thick.
    b. 5/8" thick.
    c. 1/2" thick.
    d. 3/8" thick.

67. The installation of a fixed glass panel is:

    a. different from regular windows and, therefore, requires special tools.
    b. different from that of regular window.
    c. the same as that of regular windows, but requires special tools.
    d. the same as that of regular windows.

70.02.03.04 (continued)

68. Why are wedge blocks used in window installations?

- a. to fill large window installation openings.
- b. to keep the cripple studs aligned.
- c. to provide extra strength for the window pane.
- d. to raise the frame to the correct height as marked on the story pole.

69. The bottom portion of a window is more commonly known as the:

- a. jamb.
- b. sill.
- c. bead.
- d. stool.

70. Can insulating glass units be altered by the craftsman at the building site?

- a. sometimes, for minor changes.
- b. yes, this is never a problem.
- c. no.
- d. yes, but only with extreme care and with the use of special tools.

70.02.03.05

71. If a window has no stool or apron, and the trim runs all the way around the window, this is called:

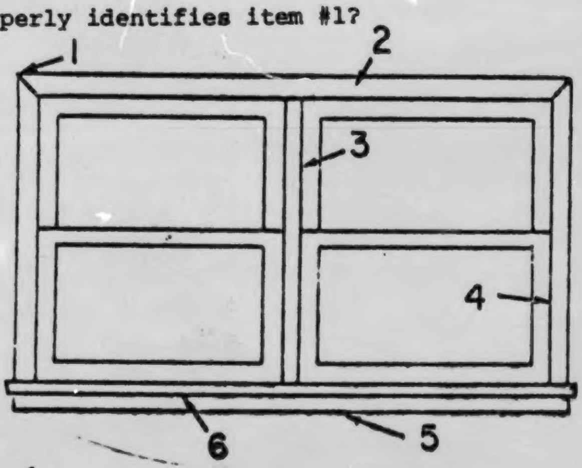
- a. picture framing.
- b. miter framing.
- c. casing.
- d. teardrop casing.

72. When installing window trim, which of the following items is the last member to be applied?

- a. stool.
- b. head casing.
- c. apron.
- d. side casing.

73. Which of the following terms properly identifies item #1?

- a. apron.
- b. head casing.
- c. stool.
- d. miter.



70.02.03.05 (continued)

74. The horizontal member that laps over the sill and extends beyond the side casing is the:

   a. mullion.
   b. miter.
   c. apron.
   d. stool.

75. When insulation is compressed too tighly between the window and trimmer, which of the following will result?

   a. nothing will happen.
   b. the window will be distorted by pressure.
   c. the window opening will enlarge.
   d. the bearing paritions will weaken.

70.02.04.01

76. Nail spacing on single layer sheetrock should not exceed:

   a. 10" on ceilings and 10" on walls.
   b. 10" on ceilings and 12" on walls.
   c. 7" on ceilings and 8" on walls.
   d. 3" on ceilings and 5" on walls.

77. When taping sheetrock, how many coats of joint compound should be used?

   a. two.
   b. four.
   c. three.
   d. one.

78. Sheetrock has a:

   a. noncombustible core.
   b. flammable core.
   c. corrosive core.
   d. combustible core.

79. Which of the following ring nails are recommended for securing sheetrock to wall framing?

   a. 1/2" head and 1 1/2" long.
   b. 1/4" head and 1 1/4" long.
   c. 1/2" head and 2" long.
   d. 1/8" head and 2" long.

70.02.04.02

80. Interior corners of sheetrock, both horizontal and vertical, are reinforced with:

    a. molly screws.
    b. double nailing.
    c. reinforcing tape.
    d. metal corner beads.

70.02.04.03

81. If two layers of furring strips are required, the second layer should be positioned:

    a. parallel with the first layer.
    b. perpendicularly to the first layer.
    c. diagonally to the first layer.
    d. directly underneath and parallel with the first layer.

82. Standard acoustical tile has a wide stapling or nailing flange on:

    a. 1 edge.
    b. 4 edges.
    c. 3 edges.
    d. 2 edges.

83. Since it is essential that the lower face of the furring strips be level with each other, this alignment should be checked with:

    a. carpenter's level.
    b. a steel rule.
    c. a suitable length of 2 x 4.
    d. the human eye.

84. Fasteners for acoustical tile should be:

    a. visible.
    b. hidden.
    c. flush.
    d. countersunk.

85. Furring strips for ceiling tile installation should be attached to:

    a. purlins.
    b. header studs.
    c. ceiling joists.
    d. bearing partitions.

70.02.04.04 & 70.02.04.05

86. Softwood wall paneling is dressed to which of the following thicknesses?

    a. 5/8"
    b. 1/4"
    c. 1/2"
    d. 3/4"

87. At which point in a room should the mechanic begin laying tile?

    a. center.
    b. upper left corner.
    c. lower right corner.
    d. lower left corner.

88. How should floor tiles be positioned in relation to one another?

    a. overlapped with the corners in line.
    b. overlapped with the centers matching the corners.
    c. butted with the centers matching the corners.
    d. butted squarely with the corners in line.

89. To lay out the second centerline, the mechanic should use:

    a. a carpenter's folding rule held at 120 degrees to the main baseline.
    b. a steel rule held at 180 degrees to the main baseline.
    c. a carpenter's square held at 90 degrees to the main baseline.
    d. any straight edge held at 45 degrees to the main baseline.

90. To determine the main centerline for a floor tile installation, the mechanic should use a:

    a. chalk line.
    b. yard stick.
    c. T-square.
    d. straight edge.

70.02.04.06 & 70.02.04.07 & 70.02.04.08

91. Which of the following joints should be used when a straight run of baseboard is joined?

    a. tongue and groove joint.
    b. butt joint.
    c. mitered-lap joint.
    d. ship-lap joint.

70.02.04.06 & 70.02.04.07 & 70.02.04.08 (continued)

92. The interior trim member which covers the joint between the wall surface and the floor finish is the:

a. baseboard.
b. base shoe.
c. cover mold.
d. mullion.

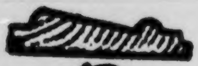
93. Baseboard joints at external corners should be:

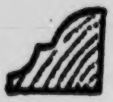
a. tongue and grooved.
b. ship-lapped.
c. coped.
d. mitered.

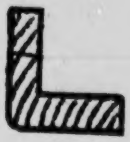
94. Molding with a concave profile used primarily where two members meet at a right angle is called:

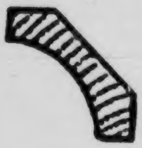
a. cove molding.
b. corner molding.
c. ogee molding.
d. quarter-round molding.

95. Which of the following molding shapes depicts a panel molding?


[✓ A]


B


C


D

70.02.04.09

96. Which of the following is the preferred angle for a stair?

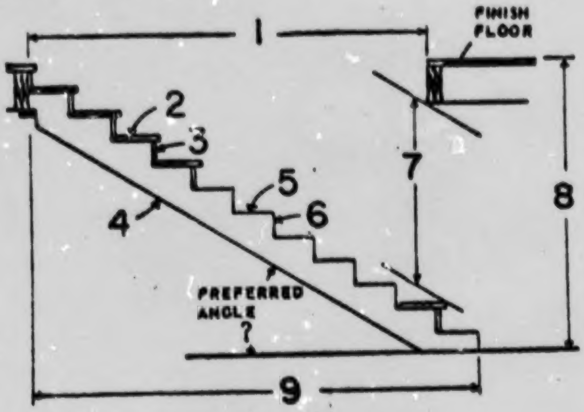
a. 38 - 48 degrees.
b. 25 - 28 degrees.
c. 35 - 40 degrees.
d. 30 - 35 degrees.

97. Stairs that run continuously from one level to another without landings or turns are called?

a. straight run.
b. service.
c. platform.
d. winding.

70.02.04.09 (continued)

The following three (3) questions refer to the illustration below.



98. Item 1 refers to which of the following?

    a. stairwell rough opening.
    b. total run.
    c. headroom.
    d. total rise.

99. Which of the following identifies item 7?

    a. headroom.
    b. stairwell rough opening.
    c. total rise.
    d. total run.

100. Item 4 is more properly known as the:

    a. stariwell rough opening.
    b. stringer.
    c. tread board.
    d. total rise.

70.02.04.10

101. The width of a main stair should be:

    a. the sum of 2 risers and 1 tread or 25".
    b. wide enough for two people to pass without contact.
    c. the sum of 1 riser and 1 tread or 17-18".
    d. a minimum of 10 feet.

102. Which of the following should be installed when a slight extension in the floor area above a stairway is needed?

    a. an elongated ceiling joist.
    b. an auxiliary header.
    c. a different style stringer.
    d. a different rise-run combination.

70.02.04.11

103. When there is going to be a carpet used later, the thickness of a main stair tread is generally:

a. 1 3/4 or 2 in.
b. 1 1/4 or 1 1/2 in.
c. 7/8 or 1 in.
d. 1 1/2 in. only.

104. A riser should not be less than:

a. 8" nor greater than 9".
b. 5" nor greater than 6".
c. 6" nor greater than 8".
d. 7" nor greater than 8".

105. Given a rise of 90", determine the riser height.
a. 6 1/2".
b. 7 1/8".
c. 7 1/16".
d. 6 15/16".

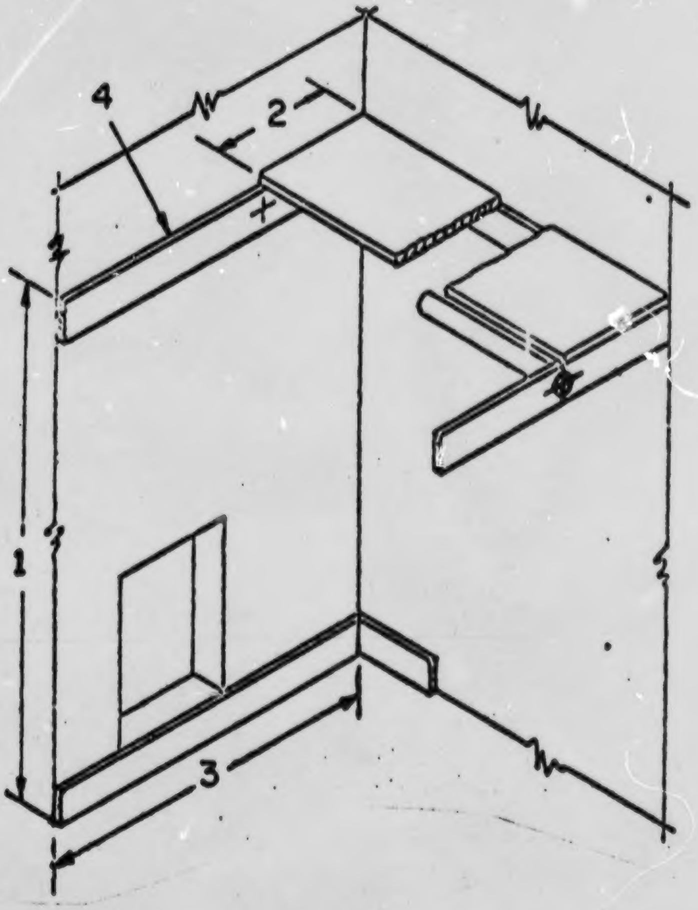
70.02.04.12

106. A handrail assembly of newels, balusters and rail is called the:

a. closed stringer.
b. open stringer.
c. turnout.
d. balustrade.

70.02.04.13

The following four (4) questions refer to the illustration provided below.



107. Ordinarily, dimension #1 is:

    a. 5' 7" - 6' 0".
    b. 4' 10" - 5' 2".
    c. 5' 3" - 5' 7".
    d. 6' 0" and higher.

108. Dimension #2 should be a minimum of:

    a. 16".
    b. 10".
    c. 12".
    d. 24".

70.02.04.13 (continued)

109. For a closet, dimension #3 should be at least:

   a. 3'.
   b. 2'.
   c. 4'.
   d. 5'.

110. Identify item #4.

   a. hook strip.
   b. apron.
   c. furring strip.
   d. base shoe.

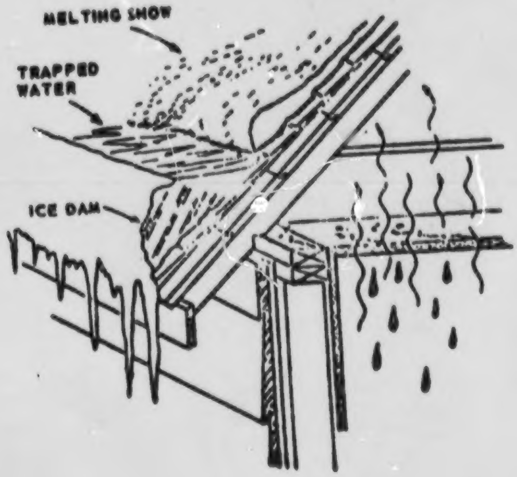
70.02.04.14

111. Which of the following types of insulation is generally furnished in rolls or strips of convenient length and in various widths suited to standard stud and joist spacing?

   a. loose fill.
   b. blanket.
   c. reflective.
   d. rigid.

112. The illustration provided below depicts which of the following symptoms?

   a. lack of insulation in walls.
   b. too much insulation in ceiling.
   c. lack of insulation in ceiling.
   d. too much insulation in ceiling.



70.02.04.14 (continued)

113. Reflective insulation differs from all other insulating materials in that:

- a. it comes in 2 x 4" squares.
- b. the number of reflecting surfaces, not the thickness of material, determines value.
- c. it does not need to be exposed to an air space.
- d. it does not require any backing material for support.

114. The transfer of heat by wave motion as shown in figure 3 is called:

- a. convection.
- b. conduction.
- c. condensation.
- d. radiation.

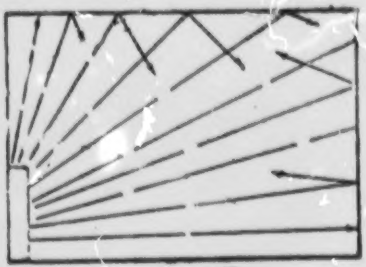


Fig. 3

115. Which term applies to the transfer of heat by another agent such as air as illustrated by figure 2?

- a. conduction.
- b. convection.
- c. radiation.
- d. condensation.

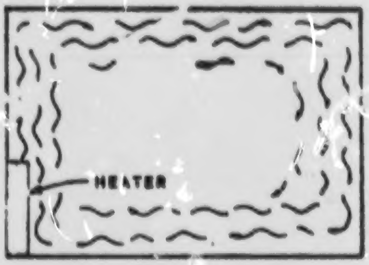


Fig. 2

70.02.04.15

116. Of all the types of edge treatments for plastic laminates used today, the most popular is:

- a. postformed edge.
- b. extruded metal edge.
- c. edge banding.
- d. shaped and dropped wood edge.

117. Plastic laminate can be installed in which of the following positions?

- a. horizontal position only.
- b. the vertical position only.
- c. the diagonal position only.
- d. any position.

70.02.04.15 (continued)

118. When a metal edge with T molding is to be applied to plastic laminate, which of the following must be first accomplished?

a. a slot is cut in the edge of the core.
b. contact cement is applied.
c. heat is applied to the metal edge.
d. the molding is held in place with masking tape.

119. To make coners of plastic laminate smooth, they should be:

a. squared.
b. beveled.
c. coped.
d. overlapped.

120. Plastic laminate consists of:

a. craft paper and graphite particles.
b. glued craft paper put in a high pressure press.
c. glued craft paper.
d. craft paper.

70.02.05.01

121. How many different size doors are used in this structure?

a. 16.
b. 15.
c. 14.
d. 10.

122. How many overhead doors are to be used in this structure?

a. 1
b. 2
c. 3
d. 4

123. How thick must the face veneer be on the flush doors?

a. 1/4".
b. 1/20".
c. 32".
d. 1/8".

124. What type of door is found in the rear of the garage?

a. flush sliding door.
b. flush batten door.
c. 3 light flush door.
d. 3 panel door.

70.02.05.01 (continued)

125. What type of door adjoins the kitchen and dining room?

a. overhead door.
b. 3 panel door.
c. double-acting flush door.
d. flush sliding door.

70.02.05.02

126. The item which is applied to each side of the door frame to cover the space between the jambs and the wall surface is called the:

a. bridging.
b. spreader.
c. double-shingle wedges.
d. door casing.

127. To minimize the tendency towards (warping), the back side of a standard door jamb is usually:

a. mitered.
b. overlapped.
c. coped.
d. kerfed.

128. Which of the following describes the proper placement of double-shingle wedges on the hinge jamb?

a. 1 block 11 in. up from bottom and 1-7 in. down from top and 1/3 between 2.
b. 1 block 8" up from the bottom and 1-12" down from top and a third block.
c. 1 block 12" up from bottom and 1-6" down from top and 1/3 block 6" below.
d. one block 14" up from the bottom and one 8c down from the top.

129. What size nails should be used to install an interior door jamb?

a. 6D finish.
b. 8D finish.
c. 5D finish.
d. 3D finish.

130. Which of the following items should be mortised into the door jamb?

a. bolt.
b. latch.
c. strike plate.
d. handle.

70.02.05.03

131. At what height are door handles usually installed?

    a. 3'.
    b. 3 1/2'.
    c. 4'.
    d. 2 1/2'.

132. What size hinge butt is used on most interior doors?

    a. 2 1/4" x 2 1/4".
    b. 2" x 2".
    c. 3 1/2" x 3 1/2".
    d. 4" x 4".

133. In order to set the door stop on the hinge jamb for a clearance of 1/16", the door should be:

    a. in the closed position.
    b. in the fully open position.
    c. in any position.
    d. partially open.

134. At what distance from the bottom of the door should the bottom door hinge be installed?

    a. 13".
    b. 6".
    c. 9".
    d. 11".

135. When mounting a door, the final trim members installed are the:

    a. side jambs.
    b. door stops.
    c. head jamb and spreader.
    d. door casing.

70.02.05.04

136. Face panels of a door are also called:

    a. cores.
    b. lattices.
    c. rails.
    d. skins.

70.02.05.04 (continued)

137. In order to set the door stop on the hinge jamb for a clearance of 1/16", the door should be:

   a. in the closed position.
   b. in the fully open position.
   c. in any position.
   d. partially open.

138. The trim unit required by an exterior door which seals the space between the bottom of the door and the door sill is the:

   a. spreader.
   b. sole.
   c. threshold.
   d. apron.

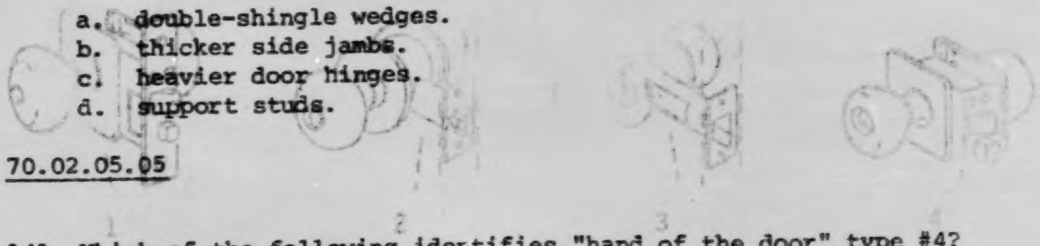
139. Which of the following width ranges is commonly used for exterior doors?

   a. 2' 8" - 3' 0".
   b. 2' 0" - 2' 6".
   c. 3' 0" - 3' 4".
   d. 2' 6" - 2' 10".

140. To support and/or straighten the side jambs of a door, a carpenter should use which of the following?

   a. double-shingle wedges.
   b. thicker side jambs.
   c. heavier door hinges.
   d. support studs.

70.02.05.05

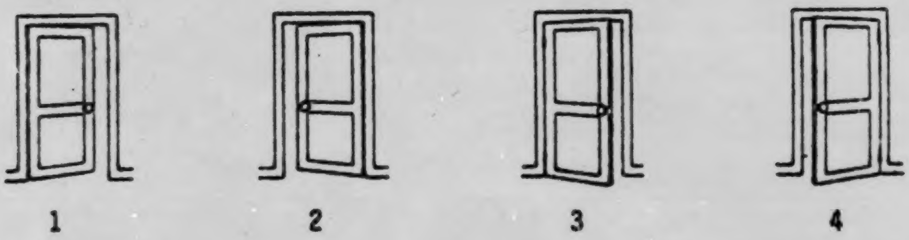


141. Which of the following identifies "hand of the door" type #4?

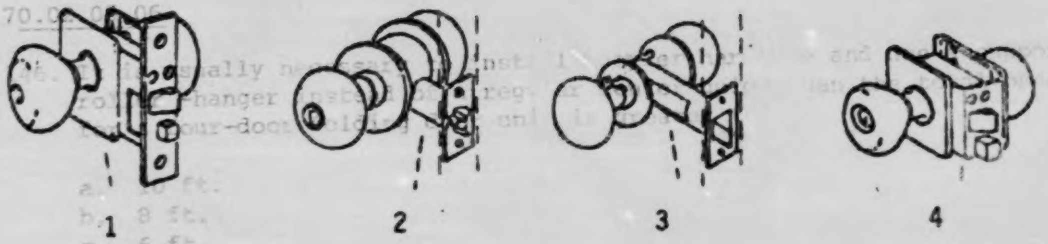
   a. right hand reverse.
   b. left hand.
   c. right hand.
   d. left hand reverse.

LOCK SET

ILLUSTRATIONS FOR ITEMS 141 - 145.



DOOR SET



LOCK SET

70.02.05.05 (continued)

142. Which of the following identifies lock set #4?

a. cylindrical lock set.
b. mortise lock set.
c. tubular lock set.
d. unit lock set.

143. Which type of lock is installed in an open cutout in the edge of a door and does not require disassembly during installation?

a. cylindrical.
b. mortise.
c. unit.
d. tubular.

144. Which of the following identifies "hand of the door" type #2?

a. right hand.
b. left hand reverse.
c. right hand reverse.
d. left hand.

145. The center of a lock to be installed in a door should measure:

a. 42" from the floor.
b. 48" from the floor.
c. 32" from the floor.
d. 38" from the floor.

70.02.05.06

146. It is usually necessary to install heavier hardware and use a supporting roller -hanger instead of a regular center guide when the total opening for a four-door folding door unit is greater than:

a. 10 ft.
b. 8 ft.
c. 6 ft.
d. 4 ft.

147. At what height on a bifold door is a door pull secured?

a. 2 1/4".
b. 3'.
c. 3 1/2'.
d. 4'.

70.02.05.07

148. How is sliding door hardware fastened on the sliding door?

    a. with screws, recessed.
    b. with screws, mortised inset.
    c. with screws, surface mounted.
    d. with screws, mortised flush.

149. What must be done if the track of a sliding door is mounted below the head jambs?

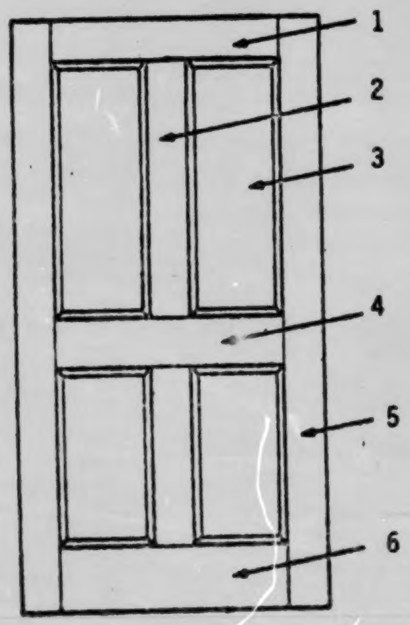
    a. nothing.
    b. height of standard door must be increased in order to provide proper fit.
    c. height of standard door must be reduced and trim strip installed to conceal hardware.
    d. a trim strip must be installed to conceal the hardware.

150. At what height on a sliding door is a door pull fastened?

    a. 4'
    b. 3'
    c. 2 1/4'
    d. 3 1/2'

70.02.05.08

Refer to the illustration below for the following three (3) questions.



70.02.05.08 (continued)

151. Identify item #1.

    a. top rail.
    b. mullion.
    c. lock or intermediate rail.
    d. stile.

152. Which of the following items properly identifies item #4?

    a. bottom rail.
    b. mullion.
    c. stile.
    d. lock or intermediate rail.

153. Which of the following identifies item #6?

    a. bottom rail.
    b. spreader.
    c. apron.
    d. stool.

154. If a door jamb is to be trimmed with wood and installed in a 2 x 4" wall with sheetrock on both sides, how wide must the door jamb be?

    a. 5"
    b. 4"
    c. 4 5/8"
    d. 3 7/8"

155. Interior door jambs are usually:

    a. 3/4" thick.
    b. 1/4" thick.
    c. 7/8" thick.
    d. 1/2" thick.

70.02.05.09

156. The corners of door casing should be:

    a. butted.
    b. spaced.
    c. overlapped.
    d. mitered.

70.02.05.09 (continued)

157. When nailing door casing in place, the nails should be spaced:

    a. 14" O.C.
    b. 12" O.C.
    c. 16" O.C.
    d. 18" O.C.

158. Which of the following is the most common type of door casing?

    a. quarter round.
    b. cove.
    c. crown.
    d. teardrop.

159. What is the approximate reveal required when installing interior door trim?

    a. 1/32".
    b. 3/16".
    c. 1/16".
    d. 1/8".

160. Nails used for securing door casing should be:

    a. countersunk.
    b. flush.
    c. protruding.
    d. toe-nailed.

70.02.05.10

161. The corners of weatherstrip should be:

    a. butted.
    b. overlapped.
    c. spaced.
    d. mitered.

162. To prevent excessive pressure on weatherstripping, the carpenter should use a:

    a. 1/2" spacer.
    b. 1/4" spacer.
    c. 1/8" spacer.
    d. 1/32" spacer.

70.02.05.11 (continued)

163. What is the function of a threshold?

   a. weatherproof an interior door.
   b. take up space left by a short door.
   c. weatherproof the exterior door.
   d. supports door moulding.

164. A threshold is placed under which of the following door types?

   a. exterior.
   b. interior.
   c. sliding.
   d. folding.

165. When installing a threshold, the rubber gasket should be placed:

   a. directly under the threshold.
   b. in such a manner as to be underneath both the threshold and the side jambs.
   c. so it protrudes to the interior portion of the threshold.
   d. so it protrudes to the exterior portion of the threshold.

COURSE PRETEST ANSWER KEY: FINISH

Occupational Area: ______________________
File Code: 70.02.00.00.A2-2
Name: ______________________

ANSWERS

0.02.01.01	1. B ______	70.02.01.05	21. B ______	70.02.02.02	41. A ______
	2. B ______		22. B ______	70.02.02.03	42. D ______
	3. A ______		23. B ______		43. D ______
	4. B ______		24. C ______		44. A ______
	5. A ______		25. B ______		45. A ______
0.02.01.02	6. B ______	70.02.01.06	26. D ______	70.02.02.04	46. A ______
	7. B ______		27. B ______		47. B ______
	8. B ______		28. B ______		48. D ______
	9. A ______		29. A ______		49. C ______
	10. A ______		30. D ______		50. A ______
70.02.01.03	11. B ______	70.02.01.07	31. C ______	70.02.02.05	51. A ______
	12. C ______		32. C ______		52. D ______
	13. C ______		33. D ______		53. D ______
	14. D ______		34. C ______		54. C ______
	15. B ______		35. A ______		55. B ______
0.02.01.04	16. D ______	70.02.02.01	36. C ______	70.02.02.06	56. C ______
	17. A ______		37. D ______		57. C ______
	18. C ______		38. D ______		58. C ______
	19. A ______		39. D ______		59. A ______
	20. A ______		40. A ______		60. D ______

COURSE PRETEST ANSWER KEY: FINISH

Occupational Area: ______________________
File Code: 70.02.00.00.A2-2
Name: ______________________

ANSWERS

70.02.02.07	61. D______	70.02.03.04	81. A______	70.02.04.04	101. D______
	62. A______		82. D______		102. D______
70.02.02.08	63. B______		83. D______		103. C______
70.02.02.09	64. A______		84. B______		104. B______
	65. A______		85. C______		105. B______
70.02.03.01	66. B______	70.02.03.05	86. A______	70.02.04.05	106. A______
	67. C______		87. C______		107. D______
	68. B______		88. D______		108. C______
	69. B______		89. D______		109. A______
	70. B______	70.02.03.06	90. B______		110. A______
70.02.03.02	71. D______	70.02.04.01	91. C______	70.02.04.06	111. C______
	72. C______		92. C______		112. A______
	73. C______		93. A______		113. D______
	74. A______		94. B______	70.02.04.07	114. A______
	75. D______	70.02.04.02	95. C______	70.02.04.08	115. A______
70.02.03.03	76. D______	70.02.04.03	96. B______	70.02.04.09	116. D______
	77. D______		97. D______		117. A______
	78. B______		98. A______		118. A______
	79. A______		99. B______		119. A______
	80. D______		100. C______		120. B______

COURSE PRETEST ANSWER KEY: FINISH

Occupational Area: ________________
File Code: 70.02.00.00.A2-2
Name: ________________

ANSWERS

70.02.04.10	121.	B	70.02.05.01	141.	C	70.02.05.05	161.	D
	122.	B		142.	B		162.	D
70.02.04.11	123.	D		143.	B		163.	C
	124.	D		144.	C		164.	D
	125	D		145.	C		165.	D
70.02.04.12	126.	D	70.02.05.02	146.	D	70.02.05.06	166.	C
70.02.04.13	127.	C		147.	D		167.	B
	128.	C		148.	A	70.02.05.07	168.	C
	129.	B		149.	B		169.	C
	130.	A		150.	C		170.	B
70.02.04.14	131.	B	70.02.05.03	151.	A	70.02.05.08	171.	A
	132.	C		152.	C		172.	D
	133.	B		153.	A		173.	A
	134.	D		154.	D		174.	C
	135.	B		155.	B		175.	A
70.02.04.15	136.	C	70.02.05.04	156.	D	70.02.05.09	176.	D
	137.	D		157.	A		177.	C
	138.	A		158.	C		178.	D
	139.	B		159.	A		179.	B
	140.	B		160.	A		180.	A

COURSE PRETEST ANSWER KEY: FINISH

Occupational Area:
File Code: 70.02.00.00.A2-2
Name:

ANSWERS

70.02.05.10	181.	D	201.		221.	
	182.	D	202.		222.	
0.02.05.11	183.	C	203.		223.	
	184.	A	204.		224.	
	185.	A	205.		225.	
	186.		206.		226.	
	187.		207.		227.	
	188.		208.		228.	
	189.		209.		229.	
	190.		210.		230.	
	191.		211.		231.	
	192.		212.		232.	
	193.		213.		233.	
	194.		214.		234.	
	195.		215.		235.	
	196.		216.		236.	
	197.		217.		237.	
	198.		218.		238.	
	199.		219.		239.	
	200.		220.		240.	

Student: ______________________ File Code: 70.02.00.00.A2-2

Date: ______________________ Date Published: 8/6/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

COURSE POST TEST: FINISH

70.02.01.01

1. The blade of a bandsaw can be tested for proper tension by:

   a. measuring with inside-outside calipers.
   b. pulling or pushing the blade to one side approximately ¼" with minimum effort.
   c. measuring with a tension tester.
   d. measuring with a dial micrometer.

2. The length of a blade required for a bandsaw can be determined by using the formula:

   a. R2 + two times the distance between centers.
   b. D2 + two times the distance between centers.
   c. R2.
   d. D + the distance between centers.

3. The movable guide on the bandsaw should be set so that the gullet of the tooth extends:

   a. 1/16" from the face of the guides.
   b. 1/4" from the face of the guides.
   c. flush with the face of the guides.
   d. 1/2" from the face of the guides.

4. To insure that saw marks on a bandsaw are cleaned off the work, one must cut:

   a. 1/8" from a layout line.
   b. 1/32" from a layout line.
   c. 1/2" from a layout line.
   d. directly on the layout line.

5. The tilt-adjustment mechanism on the bandsaw tilts the:

   a. top wheel.
   b. bottom wheel.
   c. table.
   d. blade.

70.02.01.02

6. Which part of the thickness planer is corrugated?

   a. The outfeed roll.
   b. The infeed roll.
   c. The cutterhead.
   d. The lower wedge.

7. Which part of the thickness planer prevents the stock from tearing or splitting in long slivers?

   a. The cutterhead.
   b. The chip breaker.
   c. The outfeed roll.
   d. The variable speed feed roll control.

8. When feeding stock into a thickness planer, the operator should stand:

   a. to one side of the machine.
   b. to one side of the stock.
   c. behind the machine to assure the stock comes through the planer correctly.
   d. directly behind the stock.

9. When using a thickness planer, size of thickness to be cut can be roughly calibrated by:

   a. the thickness gauge.
   b. measuring the distance between the table and the head.
   c. a thickness control valve.
   d. using a trial piece of stock.

10. Which part of the thickness planer holds the stock firmly to the bed after the cut is made?

    a. The pressure bar.
    b. The infeed roll.
    c. The cutterhead.
    d. The chip breaker.

70.02.01.03

11. The rear table of a jointer is adjusted correctly when:

    a. it is below the height of the knives at their highest point.
    b. it is exactly the same height as the knives at their highest point.
    c. the depth indicator reads 0 degrees.
    d. it is in line with the front table.

70.02.01.03 (continued)

12. The main function of the jointer's rear table is to:
    - a. square the fence for planing square edges.
    - b. produce special cuts.
    - c. support the stock after it is planed.
    - d. set the blades correctly.

13. The part of the jointer which is seldom adjusted is the:
    - a. front table.
    - b. depth indicator.
    - c. rear table.
    - d. fence.

14. When using the jointer, the front guard should be always used to:
    - a. help hold the stock flat.
    - b. protect the blades.
    - c. keep wood chips from flying.
    - d. protect the operator.

15. When using a jointer, the operator can cut a bevel by:
    - a. lowering the rear table.
    - b. tilting the fence in or out.
    - c. lowering the front table.
    - d. raising the rear table.

70.02.01.04

16. The part of the disc sander which holds the abrasive paper is the:
    - a. motor.
    - b. dust shute.
    - c. tilting table.
    - d. abrasive disc.

17. Before any replacements, adjustments, or inspections are to be done on a disc sander, one must first:
    - a. shut off the power.
    - b. clean the machine.
    - c. check the motor.
    - d. find out what is wrong.

70.02.01.04 (continued)

18. A 45 degree joint can be sanded on a disc sander to a true angle by tilting:

   a. a protractor.
   b. the table.
   c. the miter gauge.
   d. a jig.

19. When applying a new abrasive disc, one should make sure that the adhesive is applied:

   a. in a uniform coat over the entire surface of the metal disc.
   b. only on the edges of the metal disc.
   c. only near the center of a metal disc.
   d. only on a few spots on the metal disc.

20. Air bubbles can be eliminated when applying abrasive paper to a disc by:

   a. applying pressure at the center and rolling it out to the edges with a roller or a flat wooden block.
   b. applying pressure at the edges and rolling it in towards the center with a roller or a flat wooden block.
   c. applying pressure at only the points where bubbles can be seen.
   d. applying pressure only at tha edges of the disc.

70.02.01.05

21. What is the most distinct advantage of using a radial saw?

   a. It is extremely portable.
   b. All cutting is done from the top, making layout line clearly visible.
   c. It is excellent for cutting curved and irregular shapes.
   d. It is particularly good for fast, convenient, and accurate ripping.

22. Before making any adjustment on a radial saw, the most important thing to do is:

   a. wear safety glasses.
   b. shut off the power.
   c. check the condition of the saw blade.
   d. clean off the table.

23. In a basic woodworking shop, the radial saw is primarily used for:

   a. planing.
   b. crosscutting.
   c. ripping.
   d. rabbeting.

70.02.01.05 (continued)

24. To eliminate kickback, a major cause of saw accidents, the operator should hold the stock firmly against which parts of the radial saw when performing all crosscutting operations?

    a. The table base.
    b. The radial arm.
    c. The table and guide fence.
    d. The blade.

25. The part of the radial saw which allows the yoke to move forwards and backwards is called:

    a. the yoke.
    b. the track arm.
    c. the guide fence.
    d. the base.

70.02.01.06

26. The purpose of the saw-raising handwheel on a circular saw is to:

    a. secure the fence in position.
    b. raise or lower the table.
    c. hold the blade firmly in place.
    d. raise or lower the blade.

27. The ripsaw blade is used for:

    a. trimming and cutting plywood.
    b. cutting with the grain on all varieties of wood.
    c. general ripping and crosscutting.
    d. cutting against the grain.

28. A groove is a slot cut:

    a. against the grain of the wood.
    b. with the grain of the wood.
    c. at right angles to the edges grain.
    d. diagonally across the grain of the wood.

29. For the reason of safety alone, one should adjust the saw blade so that it clears the top of the stock by about:

    a. 1/8 to 1/4".
    b. 1 to 1 1/2".
    c. 3/4 to 1".
    d. 1/2 to 5/8".

70.02.01.06 (continued)

30. When one refers to a 12" table saw. he is actually talking about the:

   a. diameter of the table.
   b. height of the saw.
   c. size of the table.
   d. diameter of the saw blade.

70.02.01.07

31. Flat, parallel stock is placed between the work (back-up stock) and the table of the drill press to be sure of not drilling into the table and to prevent:

   a. crooked holes.
   b. elliptical holes.
   c. inaccuracy.
   d. splintered holes.

32. Which of the following parts of a drill press is moved up and down either manually or by a gear and rack assembly?

   a. The index pin.
   b. The adjustable lamp.
   c. The universal feed lever.
   d. The lower table or base.

33. Holes required by a job are most accurately drilled by laying out the centers and then scoring the centers with:

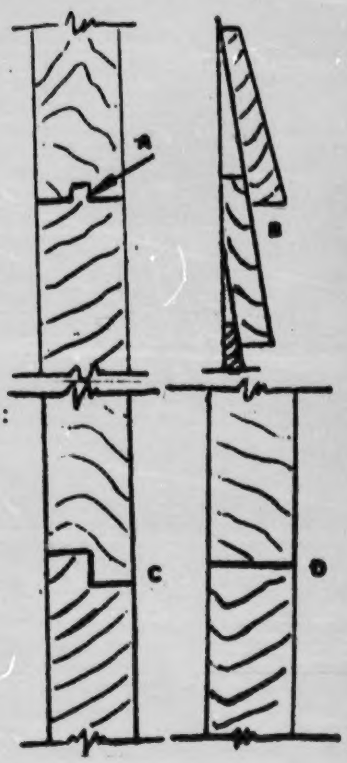
   a. a nail.
   b. a knife.
   c. a nail set.
   d. an awl.

34. When using a drill press, the length of a hole can best be gauged by:

   a. moving the head section.
   b. setting the table.
   c. setting the depth stop.
   d. adjusting the stop lock.

35. The belt and pulley assembly of a drill press is shielded by the:

   a. safety guard.
   b. quill.
   c. belt tension knob.
   d. tilting table.



70.02.02.01

36. To fasten siding in place, one should use:

  a. large head stell-wire nails.
  b. brass screws.
  c. noncorrosive nails.
  d. finishing nails.

37. Refer to the figure provided. The definition of type "A" siding is:

  a. rustic.
  b. drop.
  c. bevel.
  d. tongue and groove.

38. A priming coat should be applied to wood siding:

  a. not until the siding has been weathered for six months.
  b. after a rainstorm.
  c. within 30 days.
  d. as soon as possible.

39. Using the figure provided in question 37, give the definition of type "B" siding.

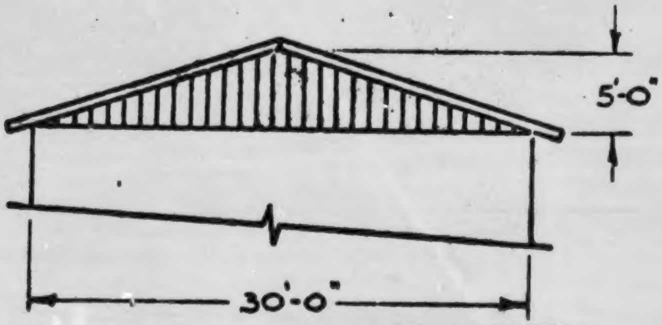
  a. wide beveled
  b. rustic
  c. drop
  d. clap board

70.02.02.01 (continued)

40. Most deterioration of horizontal wood siding is caused by:

    a. weather and decay.
    b. heat.
    c. insects.
    d. sunlight.

70.02.02.02



41. Using the sketch provided, what is the slope?

    a. 4/12
    b. 3/12
    c. 2/12
    d. 5/12

70.02.02.03

42. A special tool required to work with non-wood siding is a:

    a. drill press.
    b. router.
    c. belt sander.
    d. none.

70.02.02.03 (continued)

43. Backer blocks should be constructed from:

a. steel.
b. cement.
c. aluminum.
d. wood.

44. Refer to the sketch provided in question 41. What must be installed beneath the vertical gable siding?

a. drip cap
b. ledger
c. freeze board
d. facia board

45. The bottom edges of vertical siding are usually undercut to form a(n):

a. water drip.
b. air pocket.
c. greater surface area.
d. better appearance.

70.02.02.04

46. Once the siding has been applied, it is important to apply:

a. caulking.
b. sheeting.
c. shingles.
d. spacer strips.

47. Most caulking used in the building trades is applied with a:

a. putty knife.
b. caulking gun.
c. caulking rake.
d. spoon.

70.02.02.04 (continued)

48. When using a caulking cartridge for the first time, a craftsman must:

a. note the manufacturer.
b. check its specific gravity.
c. check its pressure rating.
d. cut off the applicator tip.

49. Caulking should only be applied to wood that has been:

a. joined.
b. sanded.
c. primed.
d. butted.

50. Caulking all seams on wooden siding is used as a primary preventive against:

a. decay.
b. wind.
c. dust.
d. insects.

70.02.02.05

51. An important fact to consider when estimating the square footage of wall coverings, is to determine the size difference between nominal and:

a. finished wall coverings.
b. estimated wall coverings.
c. rough-in wall coverings.
d. total wall coverings.

52. In estimating the amount of exterior wall coverings for a given building, a craftsman must first study the:

a. floor plans.
b. plot plan.
c. zoning ordinances.
d. exterior building plans.

53. To determine the amount of covering material needed for a given wall, a craftsman must first multiply the length by the:

a. window sizes.
b. thickness.
c. gable height.
d. height.

70.02.02.05 (continued)

54. After obtaining the overall square footage to be covered, a craftsman must then substract door and window:

a. heights.
b. numbers.
c. areas.
d. lengths.

---

55. To figure wooden siding needed to cover a gable end, a carpenter must first multiply the length by the height, and then:

a. multiply by four.
b. divide by two.
c. divide by four.
d. multiply by two.

70.02.02.06

56. When using finishing nails, the craftsman should first set the nails, then prime the wood, and then:

a. apply the final finish coat.
b. paint in the nail heads.
c. putty the holes.
d. consider the job complete.

57. When attaching the soffit, the craftsman should use nails or screws that are:

a. inexpensive.
b. expensive.
c. rust resistant.
d. purchased locally.

58. Wide cornice overhangs provide protection for:

a. gables.
b. studs.
c. walls.
d. rain gutters.

59. A strip nailed to the wall that carries the soffit and lookouts is a:

a. ledger.
b. plancier.
c. facia.
d. trim moulding.

70.02.02.06 (continued)

60. The underside inclosed surface of a cornice is called the:

    a. sheeting.
    b. sheathing.
    c. rafter.
    d. soffit.

70.02.02.07

61. The main trim member along the edge of the roof is the:

    a. lookout.
    b. soffit.
    c. ledger.
    d. facia.

62. One part that makes up a cornice is a:

    a. facia.
    b. window.
    c. shingle.
    d. jamb.

70.02.02.08

63. Vent louvers are put into soffits to provide:

    a. expansion.
    b. air circulation.
    c. better appearance.
    d. lower construction cost.

64. A narrow board attached to studding or other vertical members of a frame and adds support to joists is called a:

    a. ribbon.
    b. soffit.
    c. rafter.
    d. facia.

65. Some prefabricated soffit systems use steel channels to provide rigidity, thereby eliminating the need for:

    a. lookouts.
    b. facias.
    c. friezes.
    d. ledgers.

70.02.03.01

66. An awning window consists of:

a. a sash that is hinged along the bottom and swings inward.
b. one or more sashes that are hinged at top and swing out at bottom.
c. series connected horizontal glass slats held by metal frame at each end.
d. two or more sashes that move horizontally within a window frame.

67. A casement window consists of:

a. two sashes that slide up and down in a window frame.
b. two or more sashes that move horizontally within a window frame.
c. a sash that is hinged on the side and swings outward.
d. a sash that is hinged along the bottom and swings inward.

68. What are the three basic window classifications?

a. Revolving, fixed, and rotating.
b. Sliding, swinging, and fixed.
c. Swinging, rotating, and revolving.
d. Sliding, rotating, and fixed.

69. The only window not used for ventilation purposes is a(n):

a. awning window.
b. fixed window.
c. casement window.
d. jalousie window.

70. Most window frames used in residences are made from.

a. a magnesium-steel alloy.
b. ponderosa pine.
c. aluminum.
d. steel.

70.02.03.02

The following four questions refer to blueprint in the, "Building Trades Blueprints for Carpenters."

71. How many windows of type #1 are used in this structure?

a. 12
b. 10
c. 9
d. 11

70.02.03.02 (continued)

72. What style of window is type #2?

a. Andersen "Flexivent"
b. casement
c. double-hung
d. fixed sidelight

73. What size windows are located in the living room?

a. two 4' - 6" x 3' - 2 3/16" and three 10' - 9" x 4' - 3 1/8"
b. three 1' - 8" x 3' - 2" and three 3' - 1 3/4" x 3' - 2 3/16"
c. three 10' - 9" x 6' - 2 1/8" and two 2' - 6" x 3' - 10"
d. two 10' - 9" x 4' - 3 1/8" and two 2' - 0" x 2' - 6"

74. What style of window is used in the garage?

a. double-hung
b. casement
c. Andersen "Flexivent"
d. fixed sidelight

75. The dividers used to segment window sash openings are called:

a. mullions.
b. stools.
c. aprons.
d. muntins.

70.02.03.03

76. What is the minimum spacing required for each side of a window during installation?

a. 3/4"
b. 1/8"
c. 1"
d. 1/2"

77. The protective edging around the window pane is called the:

a. mullion.
b. jamb.
c. stool.
d. sash.

70.02.03.03 (continued)

78. Immediately before the final nailing of the window frame, the craftsman should:

   a. place wedge blocks under the sill.
   b. check the operation of the ventilating sash.
   c. drive nails temporarily into the top of the side casing.
   d. plumb the side jambs with a level.

79. A straight strip of wood used for various vertical reference heights is called a:

   a. story pole.
   b. tape measure.
   c. thermopane.
   d. mullion.

80. Why is it best to install windows consisting of two layers of glass separated by an air space?

   a. Increases visibility.
   b. Provides greater strength to the window area.
   c. Prolongs the life of the glass surface.
   d. Reduces heat loss in winter and heat gain in summer.

70.02.03.04

81. The plate glass of large insulating units are usually:

   a. 1/4" thick.
   b. 5/8" thick.
   c. 1/2" thick.
   d. 3/8" thick.

82. The installation of a fixed glass panel is:

   a. different from regular windows and, therefore, requires special tools.
   b. different from that of regular windows.
   c. the same as that of regular windows, but requires special tools.
   d. the same as that of regular windows.

83. Why are wedge blocks used in window installations?

   a. To fill large window installation openings.
   b. To keep the cripple studs aligned.
   c. To provide extra strength for the window pane.
   d. To raise the frame to the correct height as marked on the story pole.

70.02.03.04 (continued)

84. The bottom portion of a window is more commonly known as the:

a. jamb.
b. sill.
c. bead.
d. stool.

85. Can insulating glass units be altered by the craftsman at the building site?

a. Sometimes, for minor changes.
b. Yes, this is never a problem.
c. No.
d. Yes, but only with extreme care and with the use of special tools.

70.02.03.05

86. If a window has no stool or apron, and the trim runs all the way around the window, this is called:

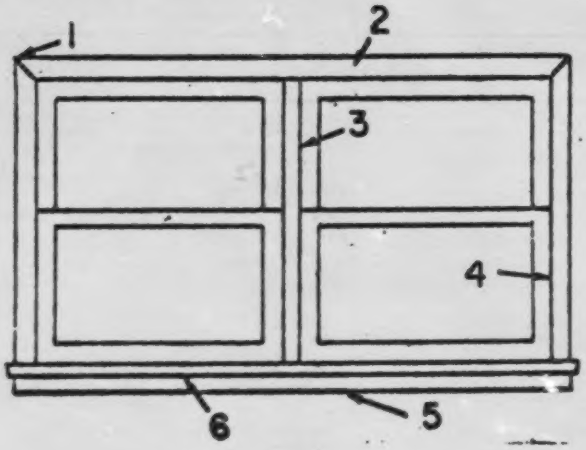
a. picture framing.
b. miter framing.
c. casing.
d. teardrop casing.

87. When installing window trim, which of the following items is the last member to be applied?

a. stool
b. head casing
c. apron
d. side casing

88. Which of the following terms properly identifies item #1?

a. apron
b. head casing
c. stool
d. miter



70.02.03.05 (continued)

89. The horizontal member that laps over the sill and extends beyond the side casing is the:

   a. mullion.
   b. miter.
   c. apron.
   d. stool.

90. When insulation is compressed too tightly between the window and trimmer, which of the following will result?

   a. Nothing will happen.
   b. The window will be distorted by pressure.
   c. The window opening will enlarge.
   d. The bearing partitions will weaken.

70.02.04.01

91. Nail spacing on single layer sheetrock should not exceed:

   a. 10" on ceilings and 10" on walls.
   b. 10" on ceilings and 12" on walls.
   c. 7" on ceilings and 8" on walls.
   d. 3" on ceilings and 5" on walls.

92. When taping sheetrock, how many coats of joint compound should be used?

   a. two
   b. four
   c. three
   d. one

93. Sheetrock has a:

   a. noncombustible core.
   b. flammable core.
   c. corrosive core.
   d. combustible core.

94. Which of the following ring nails are recommended for securing sheetrock to wall framing?

   a. 1/2" head and 1 1/2" long.
   b. 1/4" head and 1 1/4" long.
   c. 1/2" head and 2" long.
   d. 1/8" head and 2" long.

70.02.04.02

95. Interior corners of sheetrock, both horizontal and vertical, are reinforced with:

a. molly screws.
b. double nailing.
c. reinforcing tape.
d. metal corner beads.

70.02.04.03

96. If two layers of furring strips are required, the second layer should be positioned:

a. parallel with the first layer.
b. perpendicularly to the first layer.
c. diagonally to the first layer.
d. directly underneath and parallel with the first layer.

97. Standard acoustical tile has a wide stapling or nailing flange on:

a. 1 edge.
b. 4 edges.
c. 3 edges.
d. 2 edges.

98. Since it is essential that the lower face of the furring strips be level with each other, this alignment should be checked with:

a. carpenter's level.
b. a steel rule.
c. a suitable length of 2 x 4.
d. the human eye.

99. Fasteners for acoustical tile should be:

a. visible.
b. hidden.
c. flush.
d. countersunk.

100. Furring strips for ceiling tile installation should be attached to:

a. purlins.
b. header studs.
c. ceiling joists.
d. bearing partitions.

70.02.04.04

101. Softwood wall paneling is dressed to which of the following thicknesses?

a. 5/8"
b. 1/4"
c. 1/2"
d. 3/4"

102. When 1 x 2" furring strips for paneling are nailed horizontally to wall studs, the craftsman should begin at the:

a. middle of the wall and continued downward; then do upper ones.
b. middle and then alternate placement above and below.
c. ceiling edge and continue downward.
d. floor line and continued up the wall.

103. How many feet apart should vertical furring strips be nailed in order to properly support panel edges?

a. every 5 feet
b. every 2 feet
c. every 4 feet
d. every 3 feet

104. Softwood paneling ranges in width from:

a. 10" to 16".
b. 4" to 12".
c. 8" to 12".
d. 12" to 16".

105. How much clearance is required at the top and bottom of wall panels in order to place the moulding?

a. 1/2" at the top and 1/4" at the bottom.
b. 1/4" at both the top and bottom.
c. 1/4" at the top and 1/2" at the bottom.
d. 1/2" at both the top and bottom.

70.02.04.05

106. At which point in a room should the mechanic begin laying tile?

a. center.
b. upper left corner
c. lower right corner
d. lower left corner

70.02.04.05 (continued)

107. How should floor tiles be positioned in relation to one another?

a. Overlapped with the corners in line.
b. Overlapped with the centers matching the corners.
c. Butted with the centers matching the corners.
d. Butted squarely with the corners in line.

108. To lay out the second centerline, the mechanic should use:

a. a carpenter's folding rule held at 120 degrees to the main baseline.
b. a steel rule held at 180 degrees to the main baseline.
c. a carpenter's square held at 90 degrees to the main baseline.
d. any straight edge held at 45 degrees to the main baseline.

109. Which of the following describes proper linoleum installation?

a. Installing the linoleum.
b. Cutting and installing the linoleum.
c. Cutting out a pattern, then cutting and installing the linoleum.
d. Installing the linoleum and then cutting off the excess.

110. To determine the main centerline for a floor tile installation, the mechanic should use a:

a. chalk line.
b. yard stick.
c. T-square.
d. straight edge.

70.02.04.06

111. Which of the following joints should be used when a straight run of baseboard is joined?

a. tongue and groove joint
b. butt joint
c. mitered-lap joint
d. ship-lap joint

112. The interior trim member which covers the joint between the wall surface and the floor finish is the:

a. baseboard.
b. base shoe.
c. cover mold.
d. mullion.

70.02.04.06 (continued)

113. Baseboard joints at external corners should be:

a. tongue and grooved.
b. ship-lapped.
c. coped.
d. mitered.

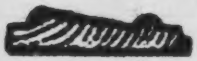
70.02.04.07

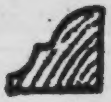
114. Molding with a concave profile used primarily where two members meet at a right angle is called:

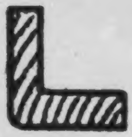
a. cove molding.
b. corner molding.
c. ogee molding.
d. quarter-round molding.

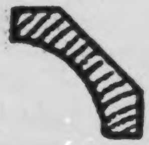
70.02.04.08

115. Which of the following molding shapes depicts a panel molding?


A


B


C


D

70.02.04.09

116. Which of the following is the preferred angle for a stair?

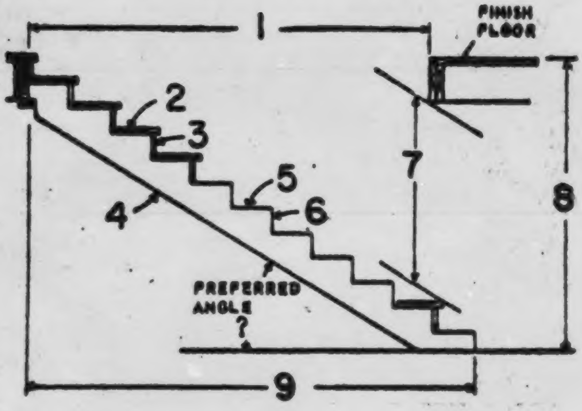
a. 38 - 48 degrees.
b. 25 - 28 degrees.
c. 35 - 40 degrees.
d. 30 - 35 degrees.

117. Stairs that run continuously from one level to another without landings or turns are called:

a. straight run.
b. service.
c. platform.
d. winding.

70.02.04.09 (continued)

The following three (3) questions refer to the illustration below.



118. Item 1 refers to which of the following?

a. stairwell rough opening
b. total run
c. headroom
d. total rise

119. Which of the following identifies item 7?

a. headroom
b. stairwell rough opening
c. total rise
d. total run

120. Item 4 is more properly known as the:

a. stairwell rough opening.
b. stringer.
c. tread board.
d. total rise.

70.02.04.10

121. The width of a main stair should be:

a. the sum of 2 risers and 1 tread or 25".
b. wide enough for two people to pass without contact.
c. the sum of 1 riser and 1 tread or 17-18".
d. a minimum of 10 feet.

70.02.04.10

122. Which of the following should be installed when a slight extension in the floor area above a stairway is needed?

a. An elongated ceiling joist.
b. An auxiliary header.
c. A different style stringer.
d. A different rise-run combination.

70.02.04.11

123. The thickness of a main stair tread is generally:

a. 1 3/4 or 2 in.
b. 1 1/4 or 1 1/2 in.
c. 7/8 or 1 in.
d. 1 1/16 or 1 1/8 in.

124. A riser should not be less than:

a. 8" nor greater than 9".
b. 5" nor greater than 6".
c. 6" nor greater than 7".
d. 7" nor greater than 8".

125. Given a rise of 90", determine the rise height.

a. 6 1/2"
b. 7 1/8"
c. 7 1/16"
d. 6 15/16"

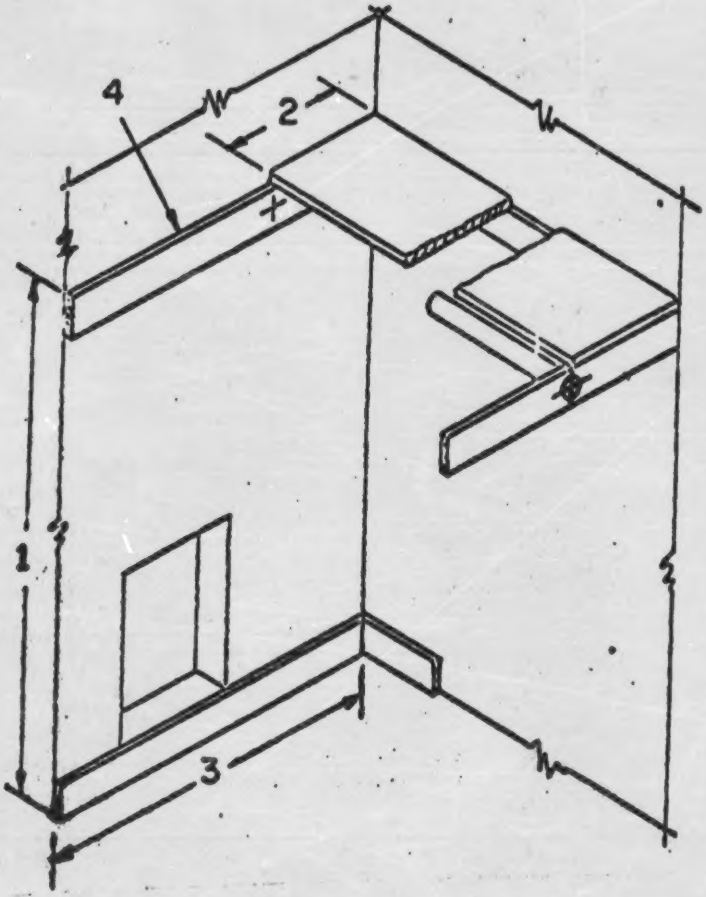
70.02.04.12

126. A handrail assembly of newels, balusters and rail is called the:

a. closed stringer.
b. open stringer.
c. turnout.
d. balustrade.

70.02.04.13

The following four (4) questions refer to the illustration provided below.



127. Ordinarily, dimension #1 is:

- a. 5' 7" - 6' 0".
- b. 4' 10" - 5' 2".
- c. 5' 3" - 5' 7".
- d. 6' 0" and higher.

128. Dimension #2 should be a minimum of:

- a. 16".
- b. 10".
- c. 12".
- d. 24".

70.02.04.13 (continued)

129. For a closet, dimension #3 should be at least:

   a. 3'.
   b. 2'.
   c. 4'.
   d. 5'.

130. Identify item #4.

   a. hook strip
   b. apron
   c. furring strip
   d. base shoe

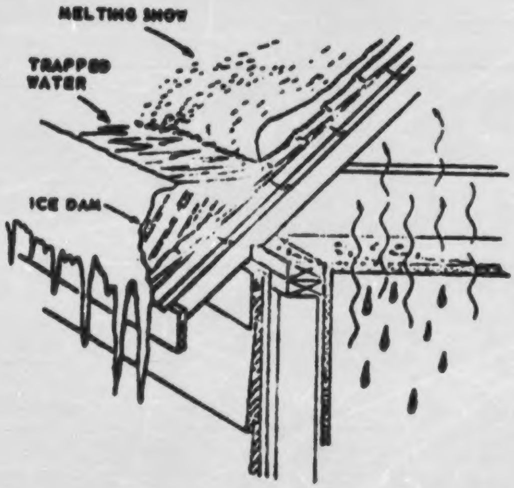
70.02.04.14

131. Which of the following types of insulation is generally furnished in rolls or strips of convenient length and in various widths suited to standard stud and joist spacing?

   a. loose fill
   b. blanket
   c. reflective
   d. rigid

132. The illustration provided below depicts which of the following symptoms?

   a. Lack of insulation in walls.
   b. Too much insulation in ceiling.
   c. Lack of insulation in ceiling.
   d. Too much insulation in ceiling.



70.02.04.14 (continued)

133. Reflective insulation differs from all other insulating materials in that:

- a. It comes in 2 x 4" squares.
- b. the number of reflecting surfaces, not the thickness of material, determines value.
- c. it does not need to be exposed to an air space.
- d. it does not require any backing material for support.

134. The transfer of heat by wave motion as shown in figure 3 is called:

- a. convection.
- b. conduction.
- c. condensation.
- d. radiation.

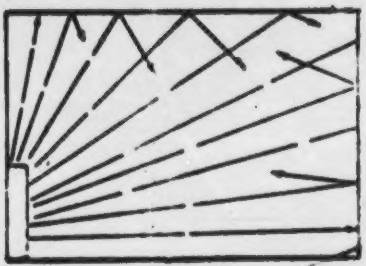


Fig. 3

135. Which term applies to the transfer of heat by another agent such as air as illustrated by figure 2?

- a. conduction
- b. convection
- c. radiation
- d. condensation

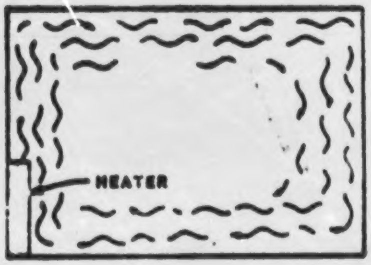


Fig. 2

70.02.04.15

136. Of all the types of edge treatments for plastic laminates used today, the most popular is:

- a. postformed edge.
- b. extruded metal edge.
- c. edge banding.
- d. shaped and dropped wood edge.

137. Plastic laminate can be installed in which of the following positions?

- a. The horizontal position only.
- b. The vertical position only.
- c. The diagonal position only.
- d. Any position.

70.02.04.15 (continued)

138. When a metal edge with T molding is to be applied to plastic laminate, which of the following must be first accomplished?

a. A slot is cut in the edge of the core.
b. Contact cement is applied.
c. Heat is applied to the metal edge.
d. The molding is held in place with masking tape.

139. To make corners of plastic laminate smooth, they should be:

a. squared.
b. beveled.
c. coped.
d. overlapped.

140. Plastic laminate consists of:

a. craft paper and graphite particles.
b. glued craft paper put in a high pressure press.
c. glued craft paper.
d. craft paper.

70.02.05.01 (See plans accompanying test for items 141-145).

141. How many different size doors are used in this structure?

a. 16
b. 15
c. 14
d. 10

142. How many overhead doors are to be used in this structure?

a. 1
b. 2
c. 3
d. 4

143. How thick must the face veneer be on the flush doors?

a. 1/4"
b. 1/20"
c. 32"
d. 1/8"

70.02.05.01 (continued)

144. What type of door is found in the rear of the garage?

a. flush sliding door
b. flush batten door
c. 3 light flush door
d. 3 panel door

145. What type of door adjoins the kitchen and dining room?

a. overhead door
b. 3 panel door
c. double-acting flush door
d. flush sliding door

70.02.05.02

146. The item which is applied to each side of the door frame to cover the space between the jambs and the wall surface is called the:

a. bridging.
b. spreader.
c. double-shingle wedges.
d. door casing.

147. To minimize the tendency towards cupping (warping), the back side of a standard door jamb is usually:

a. mitered.
b. overlapped.
c. coped.
d. kerfed.

148. Which of the following describes the proper placement of double-shingle wedges on the hinge jamb?

a. 1 block 11 in. up from bottom and 1 7 in. down from top and 1/3 between 2.
b. 1 block 8c up from the bottom and 1 12" down from top and a third block.
c. 1 block 12" up from bottom and 1 6" down from top and 1/3 block 6" below.
d. One block 14" up from the bottom and one 8c down from the top.

149. What size nails should be used to install an interior door jamb?

a. 6D finish
b. 8D finish
c. 5D finish
d. 3D finish

70.02.05.02 (continued)

150. Which of the following items should be mortised into the door jamb?

a. bolt
b. latch
c. strike plate
d. handle

70.02.05.03

151. At what height are door handles usually installed?

a. 3'
b. 3 1/2'
c. 4'
d. 2 1/2'

152. What size hinge butt is used on most interior doors?

a. 2 1/4" x 2 1/4"
b. 2" x 2"
c. 3 1/2" x 3 1/2"
d. 4" x 4"

153. In order to set the door stop on the hinge jamb for a clearance of 1/16", the door should be:

a. in the closed position.
b. in the fully open position.
c. in any position.
d. partially open.

154. At what distance from the bottom of the door should the bottom door hinge be installed?

a. 13"
b. 6"
c. 9"
d. 11"

155. When mounting a door, the final trim members installed are the:

a. side jambs.
b. door stops.
c. head jamb and spreader.
d. door casing.

70.02.05.04

156. Face panels of a door are also called:

a. cores.
b. lattices.
c. rails.
d. skins.

157. In order to set the door stop on the hinge jamb for a clearance of 1/16", the door should be:

a. in the closed position.
b. in the fully open position.
c. in any position.
d. partially open.

158. The trim unit required by an exterior door which seals the space between the bottom of the door and the door sill is the:

a. spreader.
b. sole.
c. threshold.
d. apron.

159 Which of the following width ranges is commonly used for exterior doors?

a. 2' 8" - 3' 0"
b. 2' 0" - 2' 6"
c. 3' 0" - 3' 4"
d. 2' 6" - 2' 10"

160. To support and/or straighten the side jambs of a door, a carpenter should use which of the following?

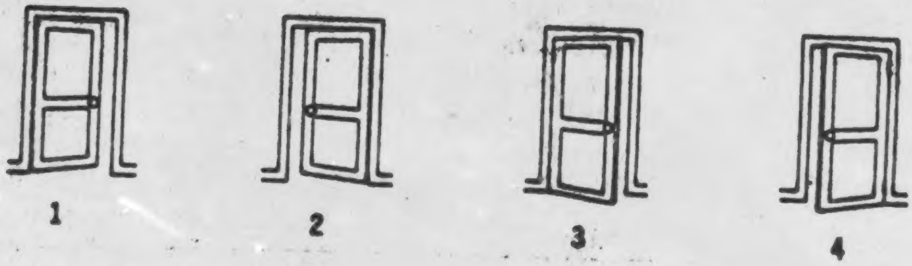
a. double-shingle wedges
b. thicker side jambs
c. heavier door hinges
d. support studs

70.02.05.05

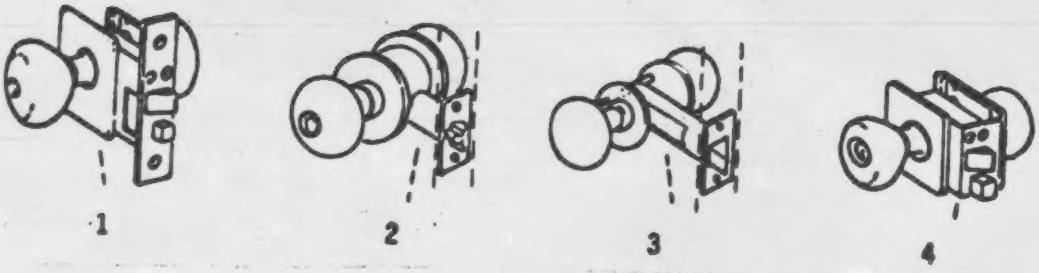
161. Which of the following identifies "hand of the door" type #4?

a. right hand reverse
b. left hand
c. right hand
d. left hand reverse

ILLUSTRATIONS FOR ITEMS 161-165



DOOR SET



LOCK SET

70.02.05.05 (continued)

162. Which of the following identifes lock set #4?

a. cylindrical lock set
b. mortise lock set
c. tubular lock set
d. unit lock set

163. Which type of lock is installed in an open cutout in the edge of a door and does not require disassembly during installation?

a. cylindrical
b. mortise
c. unit
d. tubular

164. Which of the following identifies "hand of the door" type #2?

a. right hand
b. left hand reverse
c. right hand reverse
d. left hand

165. The center of a lock to be installed in a door should measure:

a. 42" from the floor.
b. 48" from the floor.
c. 32" from the floor.
d. 38" from the floor.

70.02.05.06

166. It is usually necessary to install heavier hardware and use a supporting roller-hanger instead of a regular center guide when the total opening for a four-door folding door unit is greater than:

a. 10 ft.
b. 8 ft.
c. 6 ft.
d. 4 ft.

167. At what height on a bifold door is a door pull secured?

a. 2 1/4'
b. 3'
c. 3 1/2'
d. 4'

70.02.05.07

168. How is sliding door hardware fastened on the sliding door?

   a. With screws, recessed.
   b. With screws, mortised inset.
   c. With screws, surface mounted.
   d. With screws, mortised flush.

169. What must be done if the track of a sliding door is mounted below the head jambs?

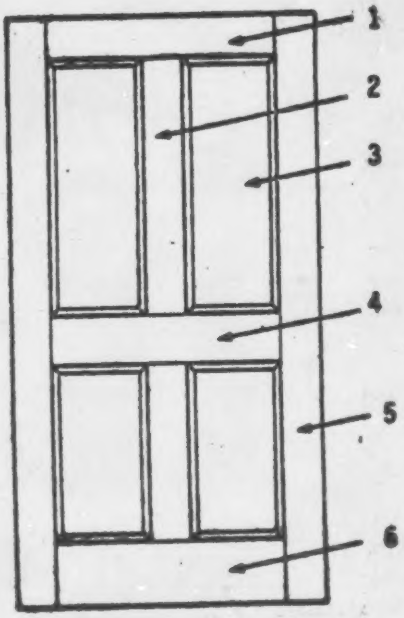
   a. Nothing.
   b. Height of standard door must be increased in order to provide proper fit.
   c. Height of standard door must be reduced and trim strip installed to conceal hardware.
   d. A trim strip must be installed to conceal the hardware.

170. At what height on a sliding door is a door pull fastened?

   a. 4'
   b. 3'
   c. 2 1/4'
   d. 3 1/2'

70.02.05.08

Refer to the illustration below for the following three (3) questions.



70.02.05.08 (continued)

171. Identify item #1.

a. top rail
b. mullion
c. lock or intermediate r
d. stile

172. Which of the following ite

a. bottom rail
b. mullion
c. stile
d. lock or intermediate r

173. Which of the following iden

a. bottom rail
b. spreader
c. apron
d. stool

174. If a door jamb is to be trimm
rock on both sides, how wi

a. 5"
b. 4"
c. 4 5/8"
d. 3 7/8"

175. Interior door jambs are us

a. 3/4" thick.
b. 1/4" thick.
c. 7/8" thick.
d. 1/2" thick.

70.02.05.09

176. The corners of door casing

a. butted.
b. spaced.
c. overlapped.
d. mitered.

70.02.05.09 (continued)

177. When nailing door casing in place, the nails should be spaced:

a. 14" O.C.
b. 12" O.C.
c. 16" O.C.
d. 18" O.C.

178. Which of the following is the most common type of door casing?

a. quarter round
b. cove
c. crown
d. teardrop

179. What is the approximate reveal required when installing interior door trim?

a. 1/32"
b. 3/16"
c. 1/16"
d. 1/8"

180. Nails used for securing door casing should be:

a. countersunk.
b. flush.
c. protruding.
d. toe-nailed.

70.02.05.10

181. The corners of weatherstrip should be:

a. butted.
b. overlapped.
c. spaced.
d. mitered.

182. To prevent excessive pressure on weatherstripping, the carpenter should use a:

a. 1/2" spacer.
b. 1/4" spacer.
c. 1/8" spacer.
d. 1/32" spacer.

70.02.05.11 (continued)

183. What is the function of a threshold?

a. Weatherproof an interior door.
b. Take up space left by a short door.
c. Weatherproof the exterior door.
d. Supports door moulding.

184. A threshold is placed under which of the following door types?

a. exterior
b. interior
c. sliding
d. folding

185. When installing a threshold, the rubber gasket should be placed:

a. directly under the threshold.
b. in such a manner as to be underneatn both the threshold and the side jambs.
c. so it protrudes to the interior portion of the threshold.
d. so it protrudes to the exterior portion of the threshold.

COURSE POST TEST ANSWER KEY: FINISH

Occupational Area: ____________________

File Code: 70.02.00.00.A2-2

Name: ____________________

ANSWERS

.02.01.01	1.	B	70.02.01.05	21.	B	70.02.02.02	41.	A
	2.	B		22.	B	70.02.02.03	42.	D
	3.	A		23.	B		43.	D
	4.	B		24.	C		44.	A
	5.	A		25.	B		45.	A
02.01.02	6.	B	70.02.01.06	26.	D	70.02.02.04	46.	A
	7.	B		27.	B		47.	B
	8.	B		28.	B		48.	D
	9.	A		29.	A		49.	C
	10.	A		30.	D		50.	A
.02.01.03	11.	B	70.02.01.07	31.	C	70.02.02.05	51.	A
	12.	C		32.	C		52.	D
	13.	C		33.	D		53.	D
	14.	D		34.	C		54.	C
	15.	B		35.	A		55.	B
.02.01.04	16.	D	70.02.02.01	36.	C	70.02.02.06	56.	C
	17.	A		37.	D		57.	C
	18.	C		38.	D		58.	C
	19.	A		39.	D		59.	A
	20.	A		40.	A		60.	D

COURSE POST TEST ANSWER KEY: FINISH

Occupational Area: ____________
File Code: 70.02.00.00.A2-2
Name: ____________

ANSWERS

02.02.07	61. D	70.02.03.04	81. A	70.02.04.04	101. D
	62. A		82. D		102. D
.02.02.08	63. B		83. D		103. C
.02.02.09	64. A		84. B		104. B
	65. A		85. C		105. B
.02.03.01	66. B	70.02.03.05	86. A	70.02.04.05	106. A
	67. C		87. C		107. D
	68. B		88. D		108. C
	69. B		89. D		109. A
	70. B	70.02.03.06	90. B		110. A
.02.03.02	71. D	70.02.04.01	91. C	70.02.04.06	111. C
	72. C		92. C		112. A
	73. C		93. A		113. D
	74. A		94. B	70.02.04.07	114. A
	75. D	70.02.04.02	95. C	70.02.04.08	115. A
.02.03.03	76. D	70.02.04.03	96. B	70.02.04.09	116. D
	77. D		97. D		117. A
	78. B		98. A		118. A
	79. A		99. B		119. A
	80. D		100. C		120. B

COURSE POST TEST ANSWER KEY: FINISH

Occupational Area: ______________________
File Code: 70.02.00.00.A2-2
Name: ______________________

ANSWERS

70.02.04.10	121.	B	70.02.05.01	141.	C	70.02.05.05	161.	D
	122.	B		142.	B		162.	D
0.02.04.11	123.	D		143.	B		163.	C
	124.	D		144.	C		164.	D
	125.	D		145.	C		165.	D
0.02.04.12	126.	D	70.02.05.02	146.	D	70.02.05.06	166.	C
70.02.04.13	127.	C		147.	D		167.	B
	128.	C		148.	A	70.02.05.07	168.	C
	129.	B		149.	B		169.	C
	130.	A		150.	C		170.	B
0.02.04.14	131.	B	70.02.05.03	151.	A	70.02.05.08	171.	A
	132.	C		152.	C		172.	D
	133.	B		153.	A		173.	A
	134.	D		154.	D		174.	C
	135.	B		155.	B		175.	A
70.02.04.15	136.	C	70.02.05.04	156.	D	70.02.05.09	176.	D
	137.	D		157.	A		177.	C
	138.	A		158.	C		178.	D
	139.	B		159.	A		179.	B
	140.	B		160.	A		180.	A

COURSE POST TEST ANSWER KEY: FINISH

Occupational Area: ______
File Code: 70.02.00.00.A2-2
Name: ______

ANSWERS

.02.05.10 181. D______
182. D______
.02.05.11 183. C______
184. A______
185. A______
186. ______
187. ______
188. ______
189. ______
190. ______
191. ______
192. ______
193. ______
194. ______
195. ______
196. ______
197. ______
198. ______
199. ______
200. ______

201. ______
202. ______
203. ______
204. ______
205. ______
206. ______
207. ______
208. ______
209. ______
210. ______
211. ______
212. ______
213. ______
214. ______
215. ______
216. ______
217. ______
218. ______
219. ______
220. ______

221. ______
222. ______
223. ______
224. ______
225. ______
226. ______
227. ______
228. ______
229. ______
230. ______
231. ______
232. ______
233. ______
234. ______
235. ______
236. ______
237. ______
238. ______
239. ______
240. ______

26. Saw, band.
27. Saw, coping.
28. Saw, power, hand.
29. Saw, power, miter.
30. Saw, radial arm.
31. Saw, table.
32. Shears, tinners.
33. Spreader, mastic.
34. Stapler, T3 and T5 Bostitch.
35. Tools, hand (kit): auger bit set
    - automatic drill
    - bit brace
    - block plane
    - chalk box
    - claw hammer (13, 16 and 20 oz.)
    - combination square
    - expansive bit (7/8 to 3 inch)
    - framing square
    - hack saw
    - hand saw (8 and 10 pt.)
    - keyhole saw (with nest of blades)
    - nail claw
    - nail sets (1/32, 2/32, 4/32 & 5/32 inch)
    - screwdriver, four in one
    - screwdriver, Phillips (set)
    - screwdriver, slot (set)
    - sliding T level
    - spiral screwdriver
    - spirit level
    - tape measure (12 and 16 ft.)
    - tool box
    - utility knife
    - wood chisel (set of 6: ¼" to 1¼" in ¼" increments)
    - wrench, adjustable

7/10/75

File Code: 70.02.01.00.A2-1

Date Published: 9/5/75

Mountain-Plains Education &
Economic Development
Program, Inc.

Glasgow AFB, Montana 59231

Learning Experience Guide

UNIT: MACHINE PROCESSES

RATIONALE:

Machines are available to help the carpenter prepare the wood and other stock materials. There are several advantages for a craftsman using machines to process stock and prepare construction components. The quality of the product from a machine operation is usually higher. The number of components prepared is usually greater when machine processes are used. With the need for greater detail and quality in construction, it is necessary that a carpenter have the skill to safely use basic machine processes.

PREREQUISITES:

The prerequisites for this unt are those for the Finish Course and are given in the course guide.

OBJECTIVES:

Given the tools, equipment, materials, construction prints and specification, the student will shape, cut to size, bore and finish woodstock using machine processes as specified for the job.

RESOURCES:

Printed Material

Cabinetmaking and Millwork. John L. Ferier, Charles A. Bennett Company, Inc., 1970.
Carpentry. United Brotherhood of Carpenters and Joiners of America, Carpenters Printing Plant, Washington, D.C., 1950-1970.
Manufacturer's Service Manuals (power equipment used)

Equipment

Countersink, rosebud
Drill, electric hand
Drill press
Jointer
Planer, thickness
Sander, disc stationary
Saw, band
Saw, radial arm
Saw table
Square, Combination
Tape measure (16 ft.)

Principal Author(s):

Lyle Leland

GENERAL INSTRUCTIONS:

This unit consists of seven Learning Activity Packages (LAPs). Each LAP will provide specific information for completion of a learning activity.

The general procedure for this unit is as follows:

(1) Read the first assigned Learning Activity Package (LAP).
(2) Begin and complete the first assigned LAP.
(3) Take and score the LAP test.
(4) Turn in the LAP test answer sheet.
(5) Determine the reason for any missed items on the LAP test.
(6) Proceed to and complete the next assigned LAP in the unit.
(7) Complete all required LAPs for the unit by following steps 3 through 6.
(8) In this Unit, there are some LAPs that have tests combined with other LAP tests. These combined tests are taken after completing the last LAP covered by the test.
(9) Take the unit tests as described in the Unit LEG "Evaluation Procedures".
(10) Proceed to the next assigned unit.

Usually, you will proceed independently in the activities. This particular unit involves machine use. It is, therefore, important to carefully follow the direction about safe practices and develop a pattern of safe procedures in machine operation. If you have any questions or problems, discuss them with the instructor.

PERFORMANCE ACTIVITIES:

.01 Band Saw Operations
.02 Thickness Planner Operations
.03 Jointer Operations
.04 Disc Sander Operations
.05 Radial Saw Operations
.06 Circular Saw Operations
.07 Drill Press Operations

EVALUATION PROCEDURES:

When pretesting:

1. The student takes the unit multiple-choice pretest.
2. Successful completion is 4 out of 5 items for each LAP part of the pretest.
3. The student then takes a unit performance test if the unit pretest was successfully completed.
4. Satisfactory completion of the performance test is meeting the criteria listed on the performance test.

When post testing:

1. The student takes a multiple-choice unit post test and a unit performance test.
2. Successful unit completion is meeting the listed criteria for the performance test.

FOLLOW-THROUGH:

Proceed to the first assigned Learning Activity Package (LAP).

Student: ____________________ File Code: 70.02.01.00.A2-2

Date: ____________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

UNIT PRETEST: MACHINE PROCESSES

37.02.01.01

1. The movable guide on the bandsaw should be set so that the gullet of the tooth extends:

   a. 1/16" from the face of the guides.
   b. flush with the face of the guides.
   c. 1/2" from the face of the guides.
   d. 1/4" from the face of the guides.

2. What is the primary use for a bandsaw?

   a. straight cutting
   b. cutting inside and outside of curves
   c. ripping
   d. cut off

3. To insure that saw marks on a bandsaw are cleaned off the work, one must cut:

   a. 1/8" from a layout line.
   b. 1/2" from a layout line.
   c. 1/32" from a layout line.
   d. directly on the layout line.

4. The proper clearance between a bandsaw blade and the guides is:

   a. 1/32" on each side.
   b. 1/2" on each side.
   c. anything that looks reasonable.
   d. 1/8" on each side.

5. A bandsaw blade is adjusted properly on the rim of the wheels when it:

   a. rides diagonally on the rim.
   b. rides on the back edge surface of the rim.
   c. rides on the center surface of the rim.
   d. rides on the front edge surface of the rim.

70.02.01.02

6. Which part of the thickness planer holds the stock firmly to the bed after the cut is made?

   a. The infeed roll.
   b. The cutterhead.
   c. The pressure bar.
   d. The chip breaker.

7. The speed at which stock goes through a thickness planer is set by:

   a. the shipguard.
   b. the pressure bar adjustment.
   c. the variable speed feed roll control.
   d. the feed roll adjustments.

8. The infeed roll can be identified by its:

   a. material.
   b. length.
   c. shape.
   d. size.

9. Running a piece of stock to thickness on a thickness planer at a fast speed, will put a great load on the motor and:

   a. split the stock.
   b. cut thinner than desired.
   c. produce highly visible ripples.
   d. clog the machine.

10. Which part of the thickness planer prevents the stock from tearing or splitting off in long slivers?

   a. The outfeed roll.
   b. The variable speed feed roll control.
   c. The chip breaker.
   d. The cutterhead.

70.02.01.03

11. When using the jointer, the front guard should be always used to:

   a. protect the operator.
   b. keep wood chips from flying.
   c. help hold the stock flat.
   d. protect the blades.

70.02.01.03 (continued)

12. To plane stock that is not less than 8" long and is under 12" long, the operator of a jointer should:

    a. use a hand plane.
    b. obtain assistance from a friend.
    c. use a push stick.
    d. use his hands.

13. The rear table of a jointer is adjusted correctly when:

    a. it is below the height of the knives at their highest point.
    b. the depth indicator reads 0 degrees.
    c. it is in line with the front table.
    d. it is exactly the same height as the knives at their highest point.

14. The part of the jointer which is seldom adjusted is the:

    a. depth indicator.
    b. rear table.
    c. front table.
    d. fence.

15. The main function of the jointer's rear table is to:

    a. support the stock after it is planed.
    b. square the fence for planing square edges.
    c. set the blades correctly.
    d. produce special cuts.

70.02.01.04

16. To sand ends square, the operator should:

    a. use the miter gauge.
    b. tilt the table.
    c. adjust the lock knob.
    d. use a coarse abrasive disc.

17. A 45 degree joint can be sanded on a disc sander to a true angle by tilting:

    a. the table.
    b. a jig.
    c. a protractor.
    d. the miter gauge.

70.02.01.04 (continued)

18. Before any replacements, adjustments, or inspections are to be done on a disc sander, one must first:

    a. check the motor.
    b. shut off the power.
    c. clean the machine.
    d. find out what is wrong.

19. When applying a new abrasive disc, one should make sure that the adhesive is applied:

    a. in a uniform coat over the entire surface of the metal disc.
    b. only near the center of the metal disc.
    c. only on the edges of the metal disc.
    d. only on a few spots on the metal disc.

20. The end of a board cannot be sanded square to its working surfaces unless:

    a. the table and miter gauge are set square to the abrasive disc.
    b. the table is set square to the abrasive disc.
    c. the board is held freehand at 180 degrees to the abrasive disc.
    d. the miter gauge is set square to the abrasive disc.

70.02.01.05

21. In a basic woodworking shop, the radial saw is primarily used for;

    a. crosscutting.
    b. ripping.
    c. planing.
    d. rabbeting.

22. The part of the radial saw which protects the operator from the saw blade is the:

    a. radial arm.
    b. blade guards.
    c. guide fence.
    d. anti-kickback fingers.

23. On some radial saws, the radial arm is also called the:

    a. safety guard.
    b. guide fence.
    c. overarm.
    d. yoke.

70.02.01.05 (continued)

24. The radial saw is raised and lowered by using:

    a. the track locking lever.
    b. the front guide fence controls.
    c. the elevating crank.
    d. shims.

25. The function of the radial saw's guide fence is to:

    a. provide a setting for length.
    b. keep scraps of stock from the blade.
    c. provide support for stock.
    d. support the table.

70.02.01.06

26. The plywood combination saw blade is used for:

    a. general ripping and crosscutting.
    b. cutting across grain.
    c. cutting with the grain on all varieties of wood.
    d. trimming and cutting plywood.

27. For the reason of safety alone, one should adjust the saw blade so that it clears the top of the stock by about:

    a. 1/8 to 1/4".
    b. 1 to 1 1/2".
    c. 1/2 to 5/8".
    d. 3/4 to 1".

28. Carbide-tipped blades are extremely useful for:

    a. cutting sheet metal.
    b. cutting carbides.
    c. cutting sheet iron.
    d. high production work as well as for cut hand board, plastic laminate, and other materials.

29. When one refers to a 12" table saw, he is actually talking about the:

    a. size of the table.
    b. diameter of the table.
    c. height of the saw.
    d. diameter of the saw blade.

70.02.01.06 (continued)

30. The part of a circular saw which keeps the saw kerf open, thereby preventing wood from binding on the blade, is the:

    a. graduated guide bar.
    b. miter gauge.
    c. fence.
    d. splitter.

70.02.01.07

31. The spindle or quill of a drill press is set in position by the:

    a. key chuck.
    b. threaded mounting collar.
    c. quill lock.
    d. depth stop.

32. All countersink holes may be drilled to the same depth on a drill press by setting the:

    a. key chuck.
    b. quill lock.
    c. threaded mounting collar.
    d. depth stop.

33. Which of the following is the most common cause of injury to be sustained while using a drill press?

    a. Failing to tighten a drill bit adequately.
    b. Using the wrong sized drill bit.
    c. Using too great a speed.
    d. Forgetting to shut off the power when finished using the machine.

34. Flat, parallel stock is placed between the work (back-up stock) and the table of the drill press to be sure of not drilling into the table and to prevent:

    a. elliptical holes.
    b. inaccuracy.
    c. splintered holes.
    d. crooked holes.

35. A machine bit can be identified by its:

    a. round straight shank.
    b. offset shank.
    c. square shank.
    d. tapered shank.

UNIT PRETEST ANSWER KEY: MACHINE PROCESSES

LAP 01

1. a
2. c
3. c
4. a
5. c

LAP 02

6. c
7. c
8. c
9. c
10. c

LAP 03

11. a
12. c
13. d
14. b
15. a

LAP 04

16. a
17. d
18. b
19. a
20. a

LAP 05

21. a
22. b
23. c
24. c
25. c

LAP 06

26. d
27. a
28. d
29. d
30. d

LAP 07

31. c
32. b
33. c
34. b
35. a

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

File Code: 70.02.01.01.A2-0

Date Published: 9/5/75

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Band Saw Operations

OBJECTIVES:

Adjust a band saw to perform specified operations and accomplish those operations using safe procedures.

Identify band saw size, major parts by appearance and safety precautions to be followed for its use.

State band saw major parts functions, procedures for maintenance and procedures for operation.

EVALUATION PROCEDURE:

Equipment operation and assigned project meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Cabinetmaking and Millwork, Feirer.
Carpentry, Carpenters Printing Plant.
Manufacturer's Service Manual for Band Saw

Band saw
Combination square
Electric hand drill and bits
Tape measure

PROCEDURE:

1. Read pages 337-350 in Cabinetmaking and Millwork and pages 31-42, Unit IX in Carpentry.

2. Complete the following steps for band saw operation:

   (see Page 2)

Principal Author(s):

T. Frisbee

TAKE THE FOLLOWING STEPS FOR BAND SAW OPERATION FOR CONSTRUCTION OF KNEEHOLE DESK LEG SUPPORT (DWG KD-3) OR FOR TASK OF EQUIVALENT DIFFICULTY

Step 1. Have instructor assign you to a band saw from which the blade has been removed. Be sure that the power to the machine is shut off.

2. Determine the size of the saw and determine the length of blade required.

3. Note the width and type of blade.

4. If they are not already off, take the upper and lower wheel guards off and slide the guide to its uppermost position.

5. Remove the table alignment pin and table insert.

6. Locate the tension adjustment handle and lift or lower the upper wheel to allow blade to slip on.

7. Having the teeth facing in the proper direction, place the blade on top of the upper wheel and bottom of lower wheel so that blade rides on the center of the rim width and adjust it taut. Back off the guides if necessary.

8. Turn tension adjustment handle until blade is held on lightly.

9. Turn the wheel by hand to be sure blade is riding on center of wheel rims, adjusting tilt hand wheel if necessary by tilting wheel forward or backward.

10. Draw upper wheel so that upper tension is put on the blade. (Approximate 1/4" give should be on the blade with a minimum amount of pull to the thrust push slide at the center of the blade).

STOP____________________INSTRUCTOR CHECK
initials

11. Turn the wheels by hand and when the blade is tracking correctly, set the blade guides so that gullets are 1/16" from the face of the blade guide. Be sure upper guide is in line with bottom guides (clearance between blade and guide is paper thickness).

12. Set the ball bearing guide wheel so that it is approximately 1/64" or just barely touches the back edge of the blade. Also adjust bottom ball bearing guide wheel if the machine has one.

13. Revolve by hand for several revolutions to check alignments and settings.

14. Insert table alignment pin and set table insert and wheel guards in place. Set table to 0 position or square to blade.

STOP__________________INSTRUCTOR CHECK
initials

15. Clean off the table and floor area and put on the power; stand in front of the machine and turn on the switch. Watch and listen for misalignment or clicks.

16. If machine runs quietly and smoothly, more than likely you have done the job.

17. To take off the blade, reverse the operations you have done.

18. Coil up unused or old blades and put them in bandsaw storage.

HINT: When a blade begins to burn the wood or excessive pressure is exerted on the wood to perform the cut, it's time for a blade change.

19. Get the piece of stock you will need for drawing KD-3 or an equivalent and cut to within 1/32" of the line. Wear safety glasses.

20. Shut off the machine and when the blade movement stops clean off any scraps of stock on the table with a long stick.

STOP__________________INSTRUCTOR CHECK
initials

21. Complete the part as shown in the following blueprint.

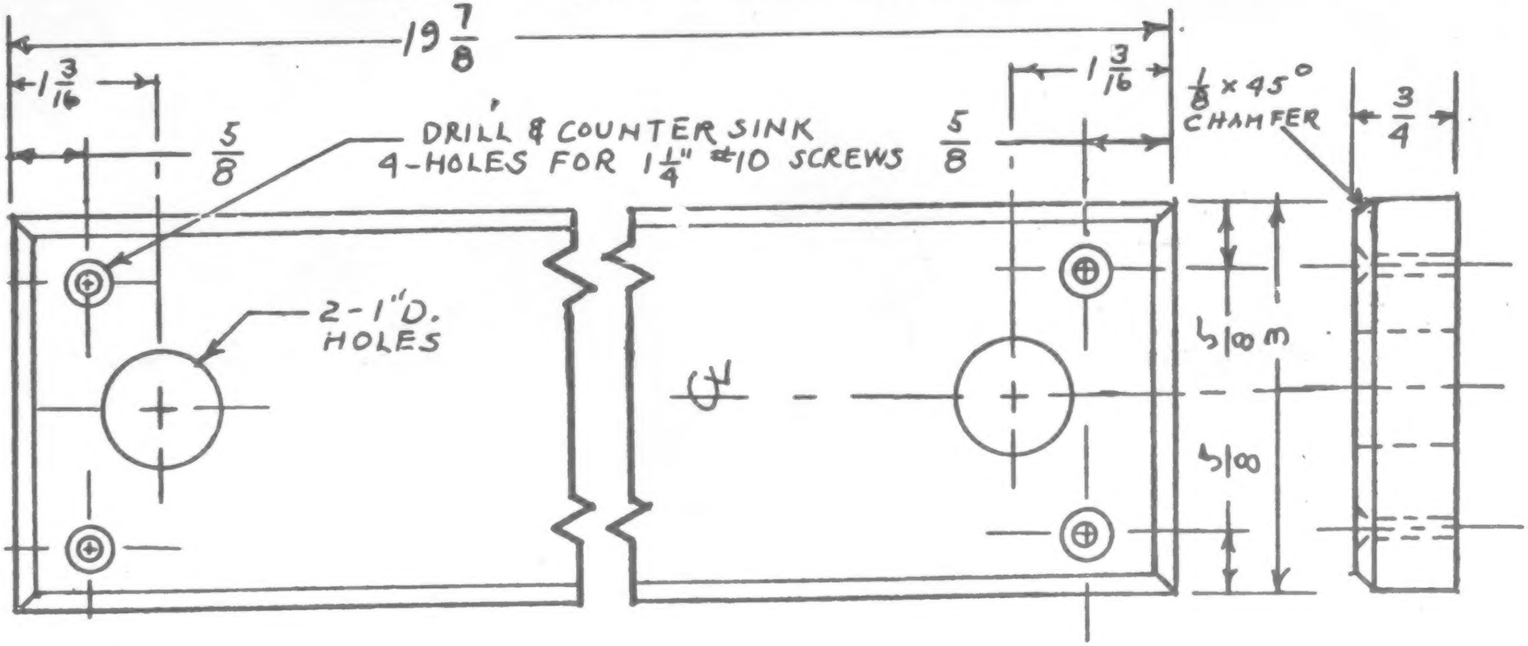
22. Take completed part to the instructor for evaluation.

MACHINES AND TOOLS REQUIRED

HAND PLANES - MARKING GAUGE - HAND DRILL - BLOCK PLANE - SQUARE - COUNTERSINK STRAIGHTEDGE - RULE - KNIFE - SANDPAPER - SANDPAPER BLOCK - HAND SAWS (CROSSCUT, RIP & BACK) - AUGER BIT - BIT BRACE - BAND SAW

ACTIVITIES

DRESSING LUMBER - MEASURING - BLUEPRINT READING - DRILLING - CHAMFERING COUNTERSINKING - LAYOUT - HAND SAWING - BORING WITH AUGER BIT AND BRACE - ROUGH CUTTING WITH A BAND SAW


19 7/8
1 3/16
5/8
DRILL & COUNTER SINK
4-HOLES FOR 1 1/4" #10 SCREWS
1 3/16
5/8
1/8 × 45°
CHAMFER
3/4
2-1" D.
HOLES
℄
3 5/8
5/8

KD
3

CRITERION CHECKLIST

Identify the size of a band saw machine and state its function.

☐ 1. States the size of a band saw.

☐ 2. States the function of the band saw.

☐ 3. Names important parts of a band saw and states their functions.

Make adjustments for proper operation of band saw.

☐ 1. Tilts wheel for proper blade alignment using the tilt alignment.

☐ 2. Draws blade taut with tension adjustment handle.

☐ 3. Table adjusted to 0 reading on the indicators and is square to the blade.

☐ 4. Guides are adjusted properly.

☐ 5. Ball bearing guide adjusted properly.

Identify band saw blades by their type, length, width, tooth shape and state their function.

☐ 1. Differentiates between a standard wood blade, skip tooth and metal cutting band saw blade by their appearance.

☐ 2. States the best use for each type.

☐ 3. States the correct length of the band saw blade.

Install a selected blade on the machine with the teeth facing in the proper direction, with proper tension. Adjust the guides and guide wheels so that the gullets are 1/16" forward from the face of the guide.

☐ 1. Removes wheel guards.

☐ 2. Removes table insert.

☐ 3. Locates upper wheel lowering adjustment and adjusts its required height (depending on whether blade is being inserted or taken off).

☐ 4. Folds saw blade.

☐ 5. Inserts blade with teeth facing downward and blade drawn taut (1/2 to 1/4" movement with pressure at

☐ 6. Guides positioned having paper width clearance between guides and blade (top and bottom guides).

☐ 7. Blade rides on center of wheel rims by properly setting the tilt adjustment.

☐ 8. Ball bearing guide adjusted so that blade is straight, approximately 1/64" from the bearing, and the gullets of the blade no more than 1/16" from the guides.

☐ 9. Table is adjusted square to blade.

Adjust the table square to the desired angle, adjust the guide to the proper height of your work, activate the machine and cut to within 1/32".

☐ 1. Sets table to 0°, 3°, 5° and secures table.

☐ 2. Saw guide set to 1/4" above work.

☐ 3. Cuts 1/32" from layout line.

☐ 4. Observes proper safety procedures.

Student: ____________________ **File Code:** 70.02.01.01.A2-2

Date: ____________________ **Date Published:** 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: BAND SAW OPERATIONS

1. **When installing a band saw blade, the teeth must be:**
   - a. facing away from you.
   - b. facing toward you and downward.
   - c. drawn taunt.
   - d. facing toward you and upward.

2. **The tension on a band saw blade is tightened or loosened by:**
   - a. moving the guide wheel(s).
   - b. adjusting the lower wheel.
   - c. adjusting the upper wheel.
   - d. using the tilt adjustment knob.

3. **The standard band saw blade is best used for cutting:**
   - a. aluminum.
   - b. wood.
   - c. sheet iron.
   - d. fiberglass.

4. **What is the primary use for a band saw?**
   - a. straight cutting
   - b. cutting inside and outside of curves
   - c. cut off
   - d. ripping

5. **The blade of a band saw can be tested for proper tension by:**
   - a. pulling or pushing the blade to one side approximately 1/4" with minimum effort.
   - b. measuring with inside-outside calipers.
   - c. measuring with a dial micrometer.
   - d. measuring with a tension tester.

6. The tilt-adjustment mechanism on the band saw tilts the:

   a. blade.
   b. table.
   c. top wheel.
   d. bottom wheel.

7. To insure that saw marks on a band saw are cleaned off the work, one must cut:

   a. 1/32" from a layout line.
   b. directly on the layout line.
   c. 1/2" from a layout line.
   d. 1/8" from a layout line.

8. When one identifies the size of a band saw as 20", he means that the:

   a. size of the wheel is 20".
   b. height of the machine is 20".
   c. blade is 20" long.
   d. size of the table is 20".

9. The first step performed when installing a band saw blade is to:

   a. take off the guards.
   b. shut off the power.
   c. remove the table insert.
   d. clean the table area.

10. The movable guide on the band saw should be set so that the gullet of the tooth extends:

    a. flush with the face of the guides.
    b. 1/2" from the face of the guides.
    c. 1/4" from the face of the guides.
    d. 1/16" from the face of the guides.

LAP TEST ANSWER KEY: BAND SAW OPERATIONS

1. b
2. c
3. b
4. b
5. a
6. c
7. a
8. a
9. b
10. d

File Code: 70.02.01.02.A2-0

Date Published: 9/8/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________

Date: ____________

PERFORMANCE ACTIVITY: Thickness Planer Operations

OBJECTIVES:

Adjust a thickness planer to perform specified operations and use safe practices to accomplish those operations.

State the functions of a thickness planer's major parts, procedures for maintenance and procedures for operation.

Identify the thickness planer size, major parts by appearance and safety precautions to be followed for its use.

EVALUATION PROCEDURE:

Equipment operation and assigned project meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Cabinetmaking and Millwork, Ferier.
Carpentry, Carpenters Printing Plant.
Manufacturer's Service Manual for Thickness Planer

Combination square
Measuring tape (12 ft.)
Thickness planer

PROCEDURE:

1. Read pages 260-266 in Cabinetmaking and Millwork and pages 56-57, Unit IX in Carpentry.

2. Using the attached plan or a similar plan that incorporates the objective, complete the steps on the following pages.

   (NOTE: The surfacer or thickness planer is one of the essential machines used for preparing lumber to an even thickness. Therefore, knowledge of its parts and function is necessary for you, the woodworking trainee.)

Principal Author(s):

T. Frisbee

Use of Thickness Planer

Step 1. **Use an available thickness planer.**

2. Shut off the power at the power panel and clean the table and floor area using a bench brush.

3. Locate the base. This is the heaviest part of the machine which serves as a mounting for the working parts. It should be positioned flat and level and rarely needs adjustment of any kind.

4. Some surfacers have a feed speed control usually located on the base. Turning this control will govern how many feet per minute of the stock is forced through the cutters. The slower the feed the less ripples will appear on the surface being planed. If the machine has this control, set it so that the stock will be fed into the machine at 30 FPM.

5. The table is a flat surface on which the lumber slides while it is being surfaced to thickness. Locate the table and measure its width. This dimension is the widest a piece of wood may be for the machine to allow it to go through, and is the rated capacity for the machine. For example, if the table measures 18", it is said that the machine is an 18" surfacer or thickness planer.

HINT: Rubbing a piece of paraffin on the table will prevent the wood from binding to it.

Other than keeping the table rollers clean, they seldom need adjustment.

6. On the side of the base you will find the thickness control wheel. This adjusts the table to the desired thickness required and can be calibrated on the thickness gauge fastened on the side or front of the machine. Set the table so that it will plane a piece of stock to 3/4" thickness or B.P. specifications.

7. The motor drives the cutter head which usually has three evenly spaced knives. Successive cuts are made as the corrugated infeed roll forces the board through the planer head. The smooth outfeed roll will hold the board to the table and the table roll as it moves forward. These rolls should always be kept clean. Clean, if necessary, with turpentine or pitch solvent being very careful not to cut yourself on the sharp knives.

STOP ____________ INSTRUCTOR CHECK
Initials

8. Check the knives to see that they are sharp and not knicked. These do the cutting and the surface smoothness of your stock will be no better than the smoothness and straightness of the knives.

9. If the knives need sharpening, notify your instructor. He will have the knives sharpened or show you how to use the blade sharpener.

10. At this point, have your instructor check your performance by taking your performance evaluation.

11. Using the drawing #KD-4 and stock on which you planed a working surface and a working edge, or any board which has a working surface, and plane it to the required thickness.

12. Shut off the machine and blower and clean any shavings off the table with a long stick.

STOP ________________ INSTRUCTOR CHECK
initials

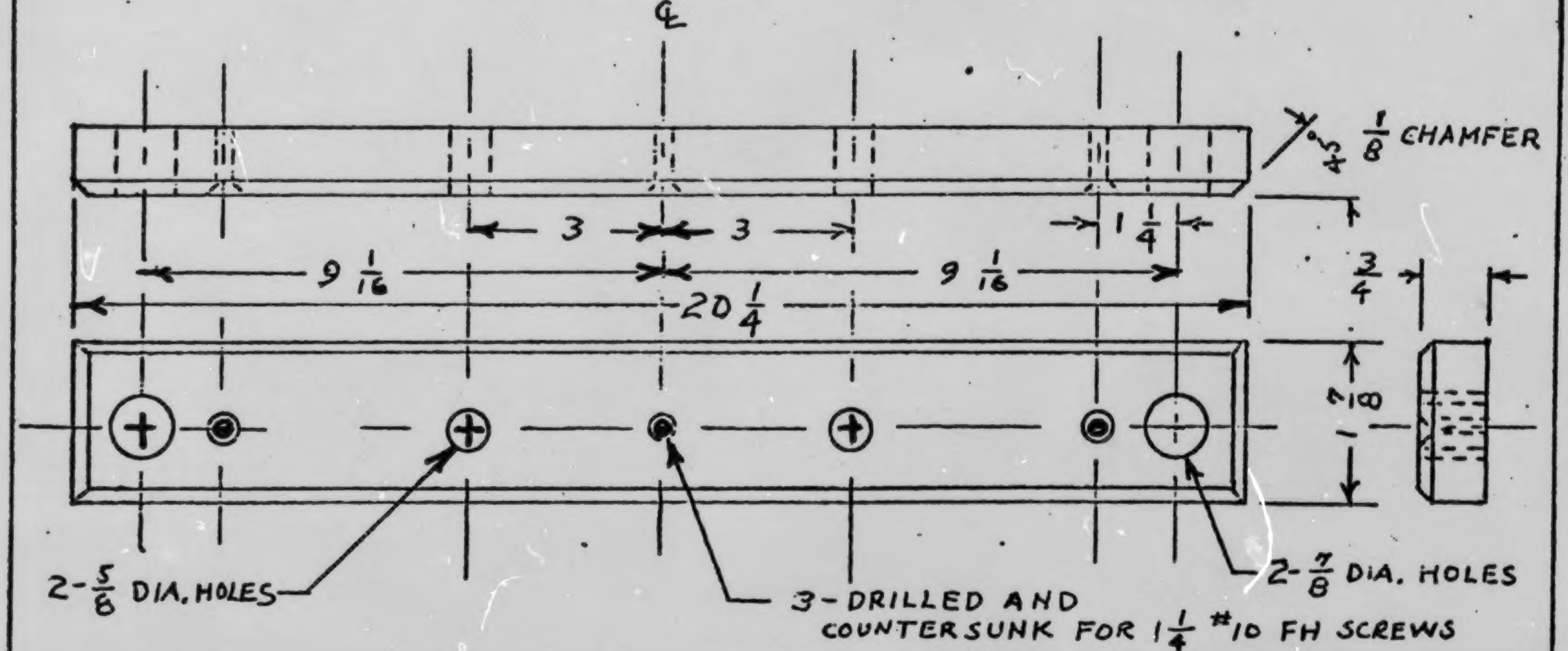
SAMPLE

TOOLS AND MACHINES REQUIRED

JOINTER - THICKNESS PLANER - DRILL PRESS - DRILL - DISK SANDER - SCREWS -SCREWDRIVER
COUNTERSINK - SQUARE - MARKING GAGE - T BEVEL - RULE - STRAIGHTEDGE - DIVIDERS
CIRCULAR SAW - MACHINE BIT - WIRE GAGE - RADIAL SAW - HAND PLANE

ACTIVITIES

DRESSING LUMBER - USING POWER TOOLS - CHAMFERING - LAYING OUT - BORING
DRILLING - COUNTERSINKING - FASTENING WITH WOOD SCREWS - SPACING
DIAMETERS - MAKING SCREW SHANK CLEARANCE HOLES


℄
$\frac{1}{8}$ CHAMFER
3
3
$1\frac{1}{4}$
$9\frac{1}{16}$
$9\frac{1}{16}$
$20\frac{1}{4}$
$\frac{3}{4}$
$\frac{7}{8}$
2-$\frac{5}{8}$ DIA. HOLES
3-DRILLED AND COUNTERSUNK FOR $1\frac{1}{4}$ #10 FH SCREWS
2-$\frac{7}{8}$ DIA. HOLES

QUINCY VOC-TECH GEN.WOOD.DEPT.	KNEEHOLE DESK LEG CLEAT	DWN.BY FL.	QUANT 1	SCALE ~	DATE 7-70	PART NO. 9	DWG NO. KD- 4	MAT'L TO SUIT	REV. 2-70

12/69

Page 4

70.02.01.02.A2-0

CRITERION CHECKLIST: THICKNESS PLANER

State safety precautions necessary for operating a thickness planer.

☐ 1. Shuts off power for adjustments.

☐ 2. Stands to one side when feeding stock.

☐ 3. Cuts a maximum of 1/16" (stock must be more than 12" long).

☐ 4. Activates blower.

☐ 5. Planes surface on jointer.

☐ 6. Doesn't plane stock on jointer.

☐ 7. Doesn't allow stock to fall on the floor

☐ 8. Shuts off machine blower.

☐ 9. Brushes off shavings from table with a long stick when machine is stopped.

Identify the size of the thickness planer machine by the width of its table.

☐ 1. States capacity of the thickness planer.

Identify the important parts by their appearance and states their function.

☐ 1. Locates and states the function of the following:

- ☐ a. Infeed Roll
- ☐ b. Thickness Gauge
- ☐ c. Outfeed Roll
- ☐ d. Thickness Control Wheel
- ☐ e Feed Control Wheel
- ☐ f. Feed and Cutter Rolls

Set the machine to specified thickness and plane stock to within 1/32" of specified thickness.

☐ 1. Cleans feed rolls and table.

☐ 2. Checks blades for knicks and dullness.

☐ 3. Feeds stock into machine with grain in proper direction.

☐ 4. Planes stock to within 1/32" of specified thickness.

☐ 5. Shuts off power and blower.

☐ 6. Cleans off shavings from table.

Student: ____________________ File Code: 70.02.01.02.A2-2

Date: ____________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: THICKNESS PLANER OPERATIONS

1. When feeding stock into a thickness planer, the operator should stand:

   a. to one side of the machine.
   b. directly behind the stock.
   c. to one side of the stock.
   d. behind the machine to assure the stock comes through the planer correctly.

2. The infeed roll can be identified by its:

   a. length.
   b. shape.
   c. material.
   d. size.

3. Which part of the thickness planer is corrugated?

   a. The outfeed roll.
   b. The cutterhead.
   c. The infeed roll.
   d. The lower wedge.

4. Which part of the thickness planer prevents the stock from tearing or splitting off in long slivers?

   a. The chip breaker.
   b. The outfeed roll.
   c. The cutterhead.
   d. The variable speed feed roll control.

5. When planing stock that is 3/8" or less in thickness, the operator of a thickness planer should:

   a. use a hand plane.
   b. use a backing board.
   c. seek assistance.
   d. make the proper adjustment on the pressure bar only.

6. Which part of the thickness planer holds the stock firmly to the bed after the cut is made?

   a. The infeed roll.
   b. The chip breaker.
   c. The cutterhead.
   d. The pressure bar.

7. The size of a thickness planer is specified by the:

   a. length of the blades.
   b. width of the table.
   c. length of the cutterhead.
   d. power of the cutterhead motor.

8. The table of a thickness planer is raised or lowered by using the:

   a. variable speed feed roll control.
   b. pressure bar adjustment.
   c. bed roll adjustment.
   d. elevating handwheel.

9. When using a thickness planer, size of thickness to be cut can be roughly calibrated by:

   a. a thickness control valve.
   b. using a trial piece of stock.
   c. the thickness gauge.
   d. measuring the distance between the table and the head.

10. The speed at which stock goes through a thickness planer is set by:

    a. the feed roll adjustments.
    b. the pressure bar adjustment.
    c. the variable speed feed roll control.
    d. the ship guard.

LAP TEST ANSWER KEY: THICKNESS PLANER OPERATIONS

1. c
2. b
3. c
4. a
5. b
6. d
7. c
8. d
9. c
10. c

File Code: 70.02.01.03.A2-0

Date Published: 9/8/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ________________

Date: ________________

PERFORMANCE ACTIVITY: Jointer Operations

OBJECTIVES:

Identify jointer size, major parts by appearnace and the safety precautions to be followed for its use.

State the functions of the jointer's major parts, the procedures for maintenance and the procedures for operation.

Adjust a jointer to perform specified operations and use safe procedures to accomplish those operations.

EVALUATION PROCEDURE:

The equipment operation and assigned project meets criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Cabinetmaking and Millwork, Feirer.
Carpentry, Carpenters Printing Plant.
Manufacturer's Service Manual for Jointer

Band saw
Combination square
Compass
Jointer
Measuring tape (12fft.)

PROCEDURE:

1. Read pages 370-380 in Cabinetmaking and Millwork and pages 43-55, Unit IX in Carpentry.

2. Complete the following steps for operation of jointer for construction of kneehole desk leg support (DWG KD-3) or for task of equivalent difficulty.

   NOTE: Use the manufacturer's "General Information Sheet For Operating a Jointer" as needed during any set up of the jointer.

Principal Author(s):

R. Arneson

PROCEDURE - STEPS: (continued)

1. Using Drawing KD-3, compute the rough size required for the job. Get the required kind of stock and layout its rough size (dressing allowance).

2. Go over to the band saw and clean any debris from the table top using a stick.

3. Set your guide so that it is approximately 1/4" above the thickness of stock being cut.

STOP ____________ INSTRUCTOR CHECK
Initials

4. Put on your safety glasses and cut the stock between 1/32" and 1/16" from the line. Shut off the power and put the leftover stock back in the lumber room.

5. Now, go to the jointer, clean off the table top. Adjust it so that it will cut approximately 1/16" and adjust the fence to allow for the width of the board.

STOP ____________ INSTRUCTOR CHECK
Initials

6. Keeping the cupside down and the grain going in the direction of the rotating blades; plane one surface uwing the push block if the stock is under 10". If you don't use your push block be careful not to have your hands or any part of your body over the machine. NOTE: Refer to attached General Information Sheets for operation of a jointer.

7. Set your fence square to the rear table and with the dressed face tight against the fence, plane one edge. (Bear pressure on the board over the rear table as the board passes over the blades. Neither of your hands should ever pass over the blades).

8. Shut off the power and replace the push block.

9. Finish dressing the stock to size using your handtools.

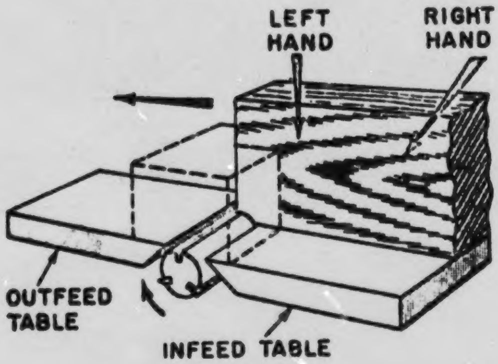
10. With a chisel point pencil, knife, square, and marking gauge, lay out the hole centers and the chamfer.

11. Cut the chamfer with a hand plane and check it with the combination square or bevel set at 45 degrees.

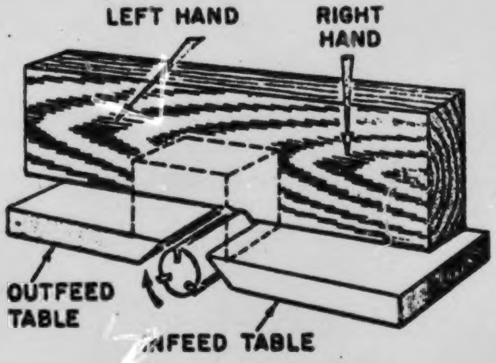
STOP ________ INSTRUCTOR CHECK
Initials

GENERAL INFORMATION SHEET FOR OPERATING A JOINTER

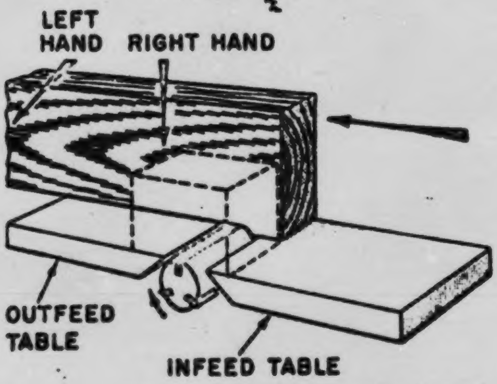
START THE CUT


LEFT HAND
RIGHT HAND
OUTFEED TABLE
INFEED TABLE

CONTINUE THE CUT


LEFT HAND
RIGHT HAND
OUTFEED TABLE
INFEED TABLE

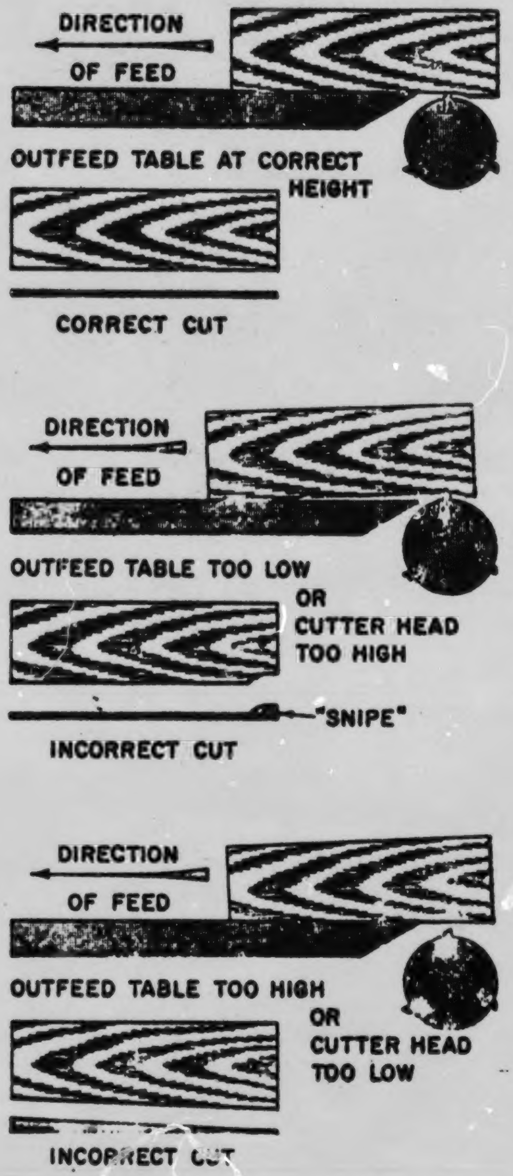
FINISH THE CUT


LEFT HAND
RIGHT HAND
OUTFEED TABLE
INFEED TABLE

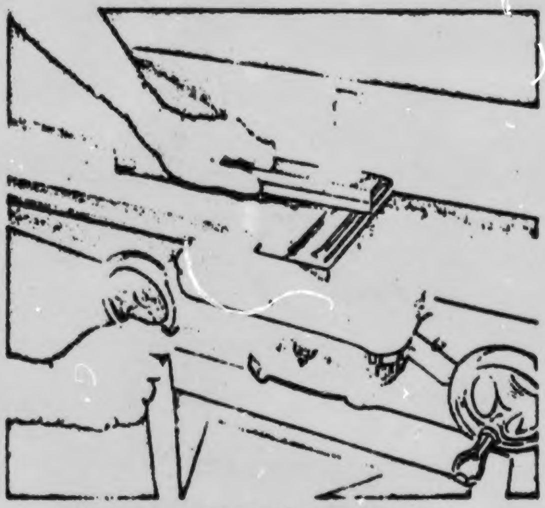
Correct method of feeding when the hands are moved as stock passes across the cutter head. The danger area is in red.

This is a safe method of using the jointer for edge jointing larger pieces.

GENERAL INFORMATION SHEET FOR OPERATING A JOINTER

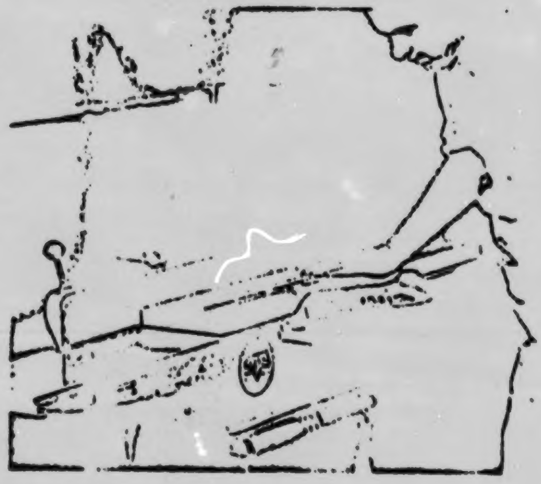

DIRECTION
OF FEED
OUTFEED TABLE AT CORRECT HEIGHT
CORRECT CUT
DIRECTION
OF FEED
OUTFEED TABLE TOO LOW
OR
CUTTER HEAD
TOO HIGH
"SNIPE"
INCORRECT CUT
DIRECTION
OF FEED
OUTFEED TABLE TOO HIGH
OR
CUTTER HEAD
TOO LOW
INCORRECT CUT

31-6. The jointer must be adjusted so the outfeed table is at exactly the same height as the cutterhead knife at its highest point. Otherwise a taper or a snipe will be cut.



Adjusting the outfeed table. Raise the table slowly until the straightedge rests evenly on the table and the knife. Always replace the guard after making this adjustment.

Starting a surfacing or facing cut.



CRITERION CHECKLIST: JOINTER OPERATION

Identify the size of a jointer by its blade size.

___ 1. Measures and states length of blades.

Identify the major parts of the jointer by their appearance and function.

1. Locates and states the function of the following:

___ a. Front Guard
___ b. Fence
___ c. Front Table
___ d. Rear Table
___ e. Fence Adjustment Handles
___ f. Front Table Adjustment Handle
___ g. Rear Table Lock Knob
___ h. Cut Depth Indicator
___ i. Push Stick

Make the necessary adjustments for planing a piece of stock straight and flat.

___ 1. Adjusts fence to required work width.
___ 2. Squares fence to rear table.
___ 3. Adjusts front table to cut 1/16".
___ 4. Checks blades for knicks and sharpness.

Plane one surface straight and flat; one edge straight and square to the surface.

_ 1. Planes one surface flat and straight cutting with the grain.

_ 2. Uses push stick.

_ 3. Planes one edge straight and square to the surface, cutting with the grain.

_ 4. Marks working surface and edge.

Student: ____________________ File Code: 70.02.01.03.A2-2

Date: ____________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: JOINTER OPERATIONS

1. The size of a jointer is indicated by:

   a. the length of the table.
   b. the length of the knives.
   c. the number of knives.
   d. the width of the table.

2. The fence of a jointer is locked square or at an angle by tightening the:

   a. fence lock.
   b. fence adjustment.
   c. rear table lock knob.
   d. front table lock knob.

3. A jointer is used primarily:

   a. to stop chamfering.
   b. for planing surfaces and edges of stock that has been cut by a saw.
   c. for beveling.
   d. for cutting a taper.

4. When using a jointer, the operator can cut a bevel by:

   a. tilting the fence in or out.
   b. raising the rear table.
   c. lowering the front table.
   d. lowering the rear table.

5. The main function of the jointer's rear table is to:

   a. square the fence for planing square edges.
   b. set the blades correctly.
   c. produce special cuts.
   d. support the stock after it has been planed.

6. The part of the jointer which is seldom adjusted is the:

   a. front table.
   b. depth indicator.
   c. rear table.
   d. fence.

7. The rear table of a jointer is adjusted correctly when:

   a. it is in line with the front table.
   b. it is exactly the same height as the knives at their highest point.
   c. the depth indicator reads 0 degrees.
   d. it is below the height of the knives at their highest point.

8. The part which protects the operator from the blades of a jointer is the:

   a. front guard.
   b. fence lock.
   c. fence.
   d. rabbeting ledge.

9. To plane stock that is between 8" and 12" long, the jointer operator should:

   a. obtain assistance.
   b. use a hand plane.
   c. use his hands.
   d. use a push stick.

10. When using the jointer, the front guard should be always used to:

    a. help hold the stock flat.
    b. protect the operator.
    c. keep wood chips from flying.
    d. protect the blades.

LAP TEST ANSWER KEY: JOINTER OPERATIONS

1. b
2. a
3. b
4. a
5. d
6. c
7. b
8. a
9. d
10. b

File Code: 70.02.01.04.A2-0

Date Published: 9/8/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ______________

Date: ______________

PERFORMANCE ACTIVITY: Disc Sander Operations

OBJECTIVES:

Identify disc sander size, major parts by appearance and the safety precautions to be followed for its use.

State the functions of the disc sander's major parts, the procedures for maintenance and procedures for operation.

Adjust a disc sander to perform specified operations and use safe practices to accomplish those operations.

EVALUATION PROCEDURE:

The equipment operation and assigned project meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly completing 8 out of 10 items on a multiple-choice test that is combined with "Radial Saw Operations" LAP test and is taken after completing that LAP.

RESOURCES:

Cabinetmaking and Millwork, Feirer.
Carpentry, Carpenters Printing Plant.
Manufacturer's Service Manual for Disc Sander

Combination square
Disc sander
Measuring tape (12 ft.)

PROCEDURE:

1. Read pages 441-460 in Cabinetmaking and Millwork and pages 89-98, Unit IX in Carpentry.
2. Follow the procedure outlined on the attached sheets and then proceed to the next assigned LAP.

Principal Author(s):

R. Arneson

Complete the following steps for use of the sanders for component construction of kneehole desk leg support or for task of equivalent difficulty.

Step 1. Go to a disc sander. Be sure that the ON-OFF switch is off on the main panel.

2. Locate the metal disc which the sandpaper disc is attached to. The size may vary from 8" diameter to 24" diameter. Inspect the condition of the sandpaper. If it appears worn or smooth as you run your fingers across it, replacement of the disc is covered in step 7 below. The paper is fastened to the disc with a special abrasive disc cement or adhesive.

3. Locate the lock knob for the table. By loosening this knob, the table can be tilted to any angle from 90 to 45 degrees. On most machines there is a protractor or degree scale with a pointer indicating at what angle the table is tilted. Tilt the table so that an edge can be sanded at 10 degrees. If the machine doesn't have a degree scale, use a bevel set at 80 degrees.

STOP________________________INSTRUCTOR CHECK
initials

4. Locate the base of the disc sander. Be sure that the base is bolted to the floor or mounted on slip-proof pads.

5. Look at the motor and see that it is tightly fastened.

6. Locate the miter gauge. Set the miter gauge to 45 degrees and check it with a 45 degree triangle.

STOP________________________INSTRUCTOR CHECK
initials

7. To replace the sandpaper disc, peel off the old disc and clean the metal disc by rubbing off adhesive particles with your fingers.

8. Get the proper size abrasive disc, rubber cement and a small rag. Apply a thin coat of cement on both the metal and paper discs. Allow the cement to dry or until when it is touched it will not stick to your fingers.

STOP________________________INSTRUCTOR CHECK
initials

9. Carefully center the paper disc to the wheel and press it in place. Apply pressure from the center out to the edges with a scrap piece of flat stock. Trim off any excess and clean off any cement which might have fallen on the table or machine.

STOP______________________INSTRUCTOR CHECK
Initials

10. Under the observation of an instructor, sand the ends of the piece for drawing KD-3 or an equivalent drawing so that they are straight and square to the working surfaces.

11. Mark the width with a marking gauge. Trim off any excess over a 1/32" on the bandsaw and sand until you split the line. Check for straightness and squareness.

12. Layout the required chamfer and hand plane to the line. Check the chamfer for a 45 degree accuracy with a combination square.

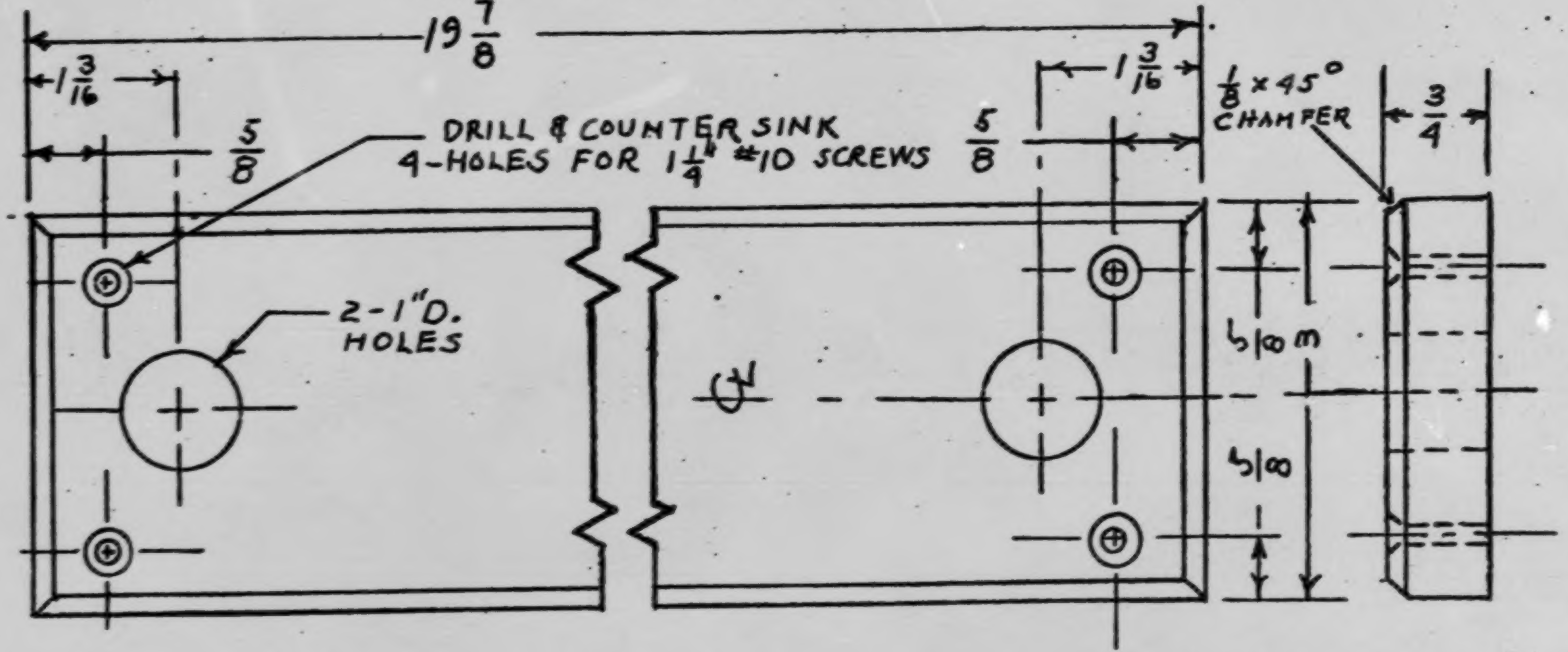
STOP______________________INSTRUCTOR CHECK
Initials

MACHINES AND TOOLS REQUIRED

HAND PLANES - MARKING GAUGE - HAND DRILL - BLOCK PLANE - SQUARE - COUNTERSINK STRAIGHTEDGE - RULE - KNIFE - SANDPAPER - SANDPAPER BLOCK - HAND SAWS (CROSSCUT, RIP & BACK) - AUGER BIT - BIT BRACE - BAND SAW

ACTIVITIES

DRESSING LUMBER - MEASURING - BLUEPRINT READING - DRILLING - CHAMFERING COUNTERSINKING - LAYOUT - HAND SAWING - BORING WITH AUGER BIT AND BRACE - ROUGH CUTTING WITH A BAND SAW


19 7/8
1 3/16
5/8
DRILL & COUNTERSINK
4-HOLES FOR 1¼" #10 SCREWS
2-1"D. HOLES
1 3/16
5/8
1/8 x 45°
CHAMFER
3/4
5/8
5/8

QUINCY VOC-TECH	KNEEHOLE DESK	DWN. BY	QUANT.	SCALE	DATE	PART	DWG NO.	MAT'L	REV.
GEN. WOOD DEPT.	LEG SUPPORT	FL.	1	¾ = 1	7-70	NO. 10	KD- 3	TO SUIT	2-70

Name__________________________

Date___________________________

CRITERION CHECKLIST: DISC SANDER OPERATION

Identify the working parts by their appearance and state their function.

1. Locates and states the function of the following:

☐ a. Abrasive Disc
☐ b. Table Lock Knob
☐ c. Table
☐ d. Miter Gauge
☐ e. Trunnion

Adjust the disc sander to sand one end straight and square to the working surfaces.

☐ 1. Tilts table to 10 degrees.

☐ 2. Sets miter gauge to 45 degrees.

☐ 3. Tilts table square to abrasive.

☐ 4. Sets miter gauge square to disc.

☐ 5. Sands end straight and square to the working edge and surface.

Sand an edge to width straight and square the working surface, equidistant from the working edge and to length having the end straight and square to all surfaces.

☐ 1. Sands on the right side of the disc.

☐ 2. Sands piece straight, parallel and square to surface.

☐ 3. Sands to correct length end being square to working surfaces.

70.02.01.04.A2-0

Remove and replace a worn abrasive disc so that it is flat, free of bumps and air pockets.

☐ 1. Cleans metal disc free of all paper and cement.

☐ 2. Selects correct size disc and abrasive paper.

☐ 3. Applies correct cement on disc and paper evenly and allows to dry before applying abrasive disc.

☐ 4. Centers and applies abrasive disc flat and free of bumps and bubbles.

☐ 5. Replaces cement and utensils.

File Code: 70.02.01.05.A2-0

Date Published: 9/8/75

Mountain-Plains Education &
Economic Development
Program, Inc.

Glasgow AFB, Montana 59231

Learning Activity Package

Student: ______________________

Date: ______________________

PERFORMANCE ACTIVITY: Radial Saw Operations

OBJECTIVES:

Identify radial saw size, major parts by appearance and the safety precautions to be followed for its use.

State the functions of the radial sander's major parts, the procedures for maintenance and procedures for operation.

Adjust a radial saw to perform specified operations and use safe procedures to accomplish those operations.

EVALUATION PROCEDURE:

Operation of the equipment and the assigned project meets the criteria of the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Cabinetmaking and Millwork, Feirer.
Carpentry, Carpenters Printing Plant.
Manufacturer's Service Manual

Combination square
Counter sink (rosebud)
Measuring tape (12 ft.)
Power hand drill and bits
Radial saw

PROCEDURE:

1. Read pages 306-336 in Cabinetmaking and Millwork and pages 25-30, Unit IX in Carpentry.
2. Follow the procedure outlined on the attached sheets.

Principal Author(s):

R. Arneson

Complete the following steps for radial saw operation for component construction of kneehole desk or for task of equivalent difficulty.

Step 1 Have your instructor assign you to a radial saw and then shut off the power at the power panel.

2 Use a long stick or bench brush and clean all scraps of wood from the table top, floor area, inside and beneath the machine.

3. Check the table of the saw assigned you. It should be kept clean, flat and true at all times. Check to see if it is square, plumb and level with the blade.

4. Look for the guide fence inserted into the table. Check to see if it is straight or damaged. Be sure that it is not scored or charred or has saw cuts, cracks or breaks. If any of these conditions exist, the fence is to be replaced. The fence must also be square with the travel of the saw. Check it with a framing square held against the fence.

5. Find the base of the saw. It must be set level to prevent twisting or misalignment to the machine.

6. Locate the yoke. The yoke can be turned 360 degrees but is normally moved only 180 degrees. The blade and motor unit on the yoke can be tilted 90 degrees to the left or right. Set the yoke so that a 30 degree cut can be made on a board at a 90 degree angle.

STOP______________________INSTRUCTOR CHECK
initials

7. Locate the track arm which enables the yoke to move forward or backward. It is commonly adjustable to any degree within 180 degrees to the left or right. Loosen the mitre clamp handle and set the track arm so that a 45 degree cut can be made. Be sure to tighten the clamp after it is set.

STOP______________________INSTRUCTOR CHECK
initials

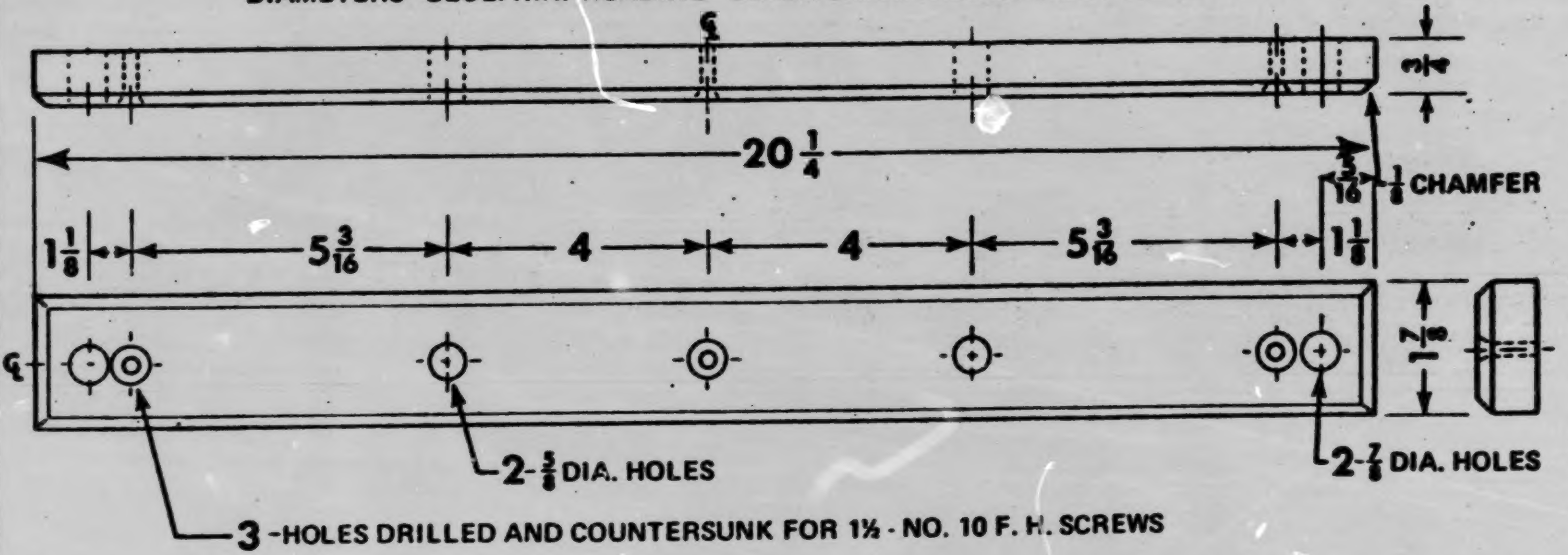
8. Get a piece of rough stock and cut it to 20 7/8" long for drawing KD-4, or cut one specified by your instructor.

TOOLS AND MACHINES TO USE

JOINTER - THICKNESS PLANNER - DRILL PRESS - DRILL - DISC SANDER - SCREWS SCREWDRIVER - COUNTERSINK - SQUARE - MARKING GAGE - T BEVEL - RULE KNIFE - STRAIGHTEDGE - CIRCULAR SAW - DIVIDERS - MACHINE BIT - WIRE - GAGE RADIAL SAW

ACTIVITIES

DRESSING LUMBER - USING POWERTOOLS - CHAMFERING - LAYING OUT - BORING DRILLING - COUNTERSINKING - FASTENING WITH WOOD SCREWS - SPACING ON DIAMETERS - BLUEPRINT READING - SCREW SHANK CLEARANCE HOLES



℄
3/4
20 1/4
3/16
1/8 CHAMFER
1 1/8
5 3/16
4
4
5 3/16
1 1/8
℄
1 7/8
2-5/8 DIA. HOLES
2-7/8 DIA. HOLES
3 -HOLES DRILLED AND COUNTERSUNK FOR 1½ - NO. 10 F. H. SCREWS

KIND OF WOOD SPECIFIED BY INSTRUCTOR

QUINCY VOC TECH GEN WOOD DEPT	KNEEHOLE DESK LEG CLEAT	DWN BY FL. P.T.	QUANT 1	SCALE	DATE 6 - 69	PART NO. 31	DWG NO. KD - 4	MAT'L TO SUIT	REV. 2-70

70.02.01.05.A2-0

Name____________________

Date____________________

CRITERION CHECKLIST: RADIAL SAW OPERATION

Identify the parts of a radial saw and state their function.

1. Locates the following parts and state their function.

_ a. Table

_ b. Guide Fence

_ c. Yoke

_ d. Track Arm

_ e. Radial Arm

_ f. Blade Guard

_ g. Saw Blade

_ h. Elevating Crank

Cut stock to rough length.

_ 1. Clears table of waste particles and checks depth setting of blade.

_ 2. Measures and marks length of piece to be cut.

_ 3. Places stock cup side down against the fence.

_ 4. Cuts stock to marked length.

Student: ______________________ File Code: 70.02.01.04 & .05.A2-2

Date: ______________________ Date Published: 8-20-74

LAP TEST: DISC SANDER/RADIAL SAW OPERATIONS

70.02.01.04

1. Before any replacements, adjustments, or inspections are to be done on a disc sander, one must first:

   a. check the motor.
   b. find out what is wrong.
   c. shut off the power.
   d. clean the machine.

2. A 45 degree joint can be sanded on a disc sander to a true angle by tilting:

   a. the table.
   b. the miter gauge.
   c. a protractor.
   d. a jig.

3. The part of the disc sander which holds the abrasive paper is the:

   a. abrasive disc.
   b. dust shute.
   c. tilting table.
   d. motor.

4. To sand ends square, the operator should:

   a. adjust the lock knob.
   b. tilt the table.
   c. use the miter gauge.
   d. use a coarse abrasive disc.

5. The end of a board cannot be sanded square to its working surfaces unless:

   a. the board is held freehand at 180 degrees to the abrasive disc.
   b. the miter gauge is set square to the abrasive disc.
   c. the table is set square to the abrasive disc.
   d. the table and miter gauge are set square to the abrasive disc.

70.02.01.05

6. To eliminate kickback, a major cause of saw accidents, the operator should hold the stock firmly against which parts of the radial saw when performing all crosscutting operations?

   a. The blade.
   b. The table and guide fence.
   c. The table base.
   d. The radial arm.

7. Before making any adjustment on a radial saw, the most important thing to do is:

   a. check the condition of the saw blade.
   b. clean off the table.
   c. wear safety glasses.
   d. shut off the power.

8. The radial saw is raised and lowered by using:

   a. shims.
   b. the elevating crank.
   c. the track locking lever.
   d. the front guide fence controls.

9. When working with long stock on a radial saw, one would normally use:

   a. a sawhorse.
   b. a backing board.
   c. the extension table on the sides of the saw.
   d. a temporary support.

10. What is the most distinct advantage of using a radial saw?

   a. It is excellent for cutting curved and irregular shapes.
   b. All cutting is done from the top, making layout line clearly visible.
   c. It is particularly good for fast, convenient, and accurate ripping.
   d. It is extremely portable.

LAP TEST ANSWER KEY: DISC SANDER/RADIAL SAW OPERATIONS

LAP 01

1. c
2. b
3. a
4. c
5. d

LAP 02

6. b
7. d
8. b
9. c
10. b

File Code: 70.02.01.06.A2-0

Date Published: 9/8/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Circular Saw Operations

OBJECTIVES:

Identify circular saw size, major parts by appearance and the safety precautions to be followed for its use.

State the functions of the circular saw's major parts, the procedures for maintenance and procedures for operation.

Adjust a circular saw to perform specified operations and use safe procedures to accomplish those operations.

EVALUATION PROCEDURE:

The operation of equipment and the assigned project meets the criteria of the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Cabinetmaking and Millwork, Feirer.
Carpentry, Carpenters Printing Plant.
Manufacturer's Service Manual

Combination square
Circular saw
Countersink (rosebud)
Measuring tape
Power hand drill and bits

PROCEDURE:

1. Read pages 267-306 in Cabinetmaking and Millwork and pages 8-24, Unit IX in Carpentry.
2. Follow the procedure outlined on the attached sheets.

Principal Author(s):

R. Arneson

Complete the following steps for circular saw operation for construction of kneehole desk leg cleat or for task of equivalent difficulty.

Step 1. Get the specified stock. Check thickness, width and length.

2. For rough cuts, mark the length about ½" longer than the finished dimension. If an end of the stock has not been previously cut, add another 3" for the first rough cut. (Rough lumber mill cuts contain grit and dirt).

STOP__________________INSTRUCTOR CHECK
initials

3. Use the circular saw to cut the rough piece. (If 3" has been allowed for cutting off the rough lumber mill cut, cut this off now). SAFETY--glasses, loose clothing, etc.

4. Set ripping fence to width plus ½".

5. Adjust height of blade. It should project 1/8" above the stock.

STOP__________________INSTRUCTOR CHECK
initials

6. Inspect stock for warp and cup. Keep cupped surface facing down from the table. Cut stock to width. Keep your body to the left side of the saw blade. Use push stick if necessary.

7. Stock having working surfaces which have been planed to thickness, should have the ends cut square. Use the miter gage.

STOP__________________INSTRUCTOR CHECK
initials

8. Set your fence to the width plus 1/64" to 1/32". The extra stock will allow for planing off saw marks.

9. Set fence to the required length. Use the miter gage and cut stock to length. If the ends are to be sanded smooth on disc sander allow an extra 1/32".

10. The stock may be too short to cut to length with the miter gage between blade and fence. In this event, put the miter gage on the left side of the blade. Use a cut-off block clamped to the fence.

11. Shut off the machine when finished. Lower the blade below the table surface.

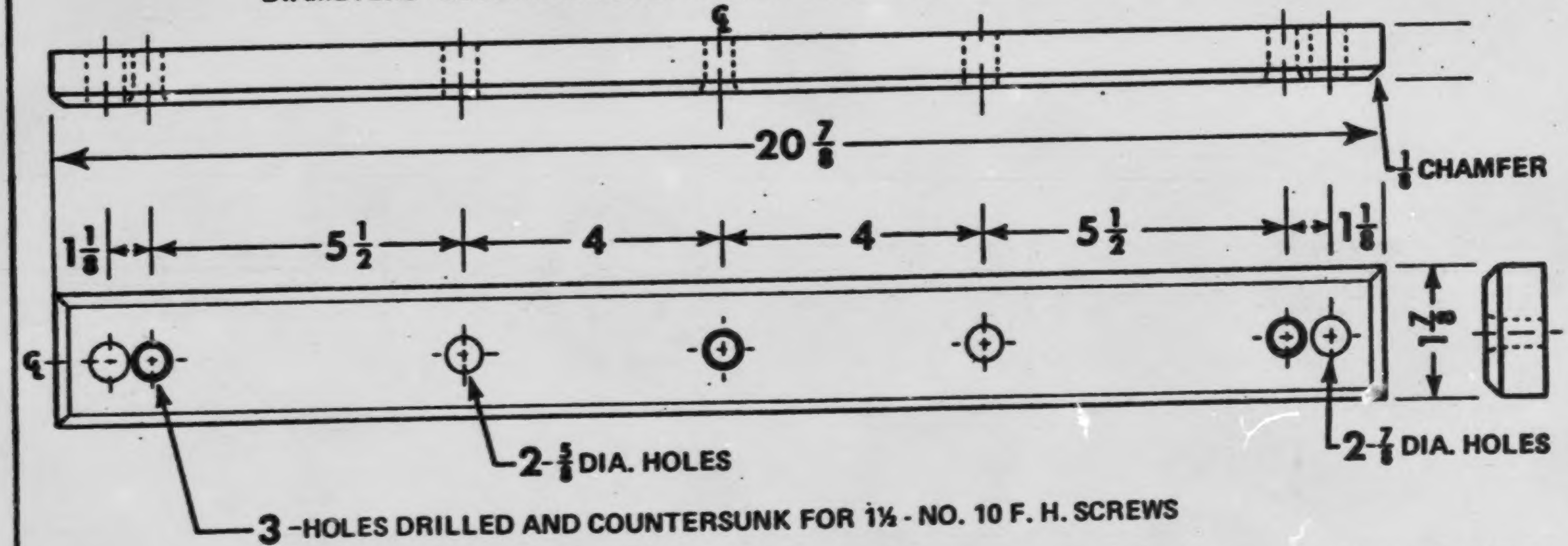
STOP_______________________INSTRUCTOR CHECK
initials

TOOLS AND MACHINES TO USE

JOINTER - THICKNESS PLANNER - DRILL PRESS - DRILL - DISC SANDER - SCREWS SCREWDRIVER - COUNTERSINK - SQUARE - MARKING GAGE - T BEVEL - RULE KNIFE - STRAIGHTEDGE - CIRCULAR SAW - DIVIDERS - MACHINE BIT - WIRE - GAGE RADIAL SAW

ACTIVITIES

DRESSING LUMBER - USING POWERTOOLS - CHAMFERING - LAYING OUT - BORING DRILLING - COUNTERSINKING - FASTENING WITH WOOD SCREWS - SPACING ON DIAMETERS - BLUEPRINT READING - SCREW SHANK CLEARANCE HOLES



2-$\frac{5}{8}$ DIA. HOLES

2-$\frac{7}{8}$ DIA. HOLES

3 -HOLES DRILLED AND COUNTERSUNK FOR 1½ - NO. 10 F. H. SCREWS

KIND OF WOOD SPECIFIED BY INSTRUCTOR

QUINCY VOC TECH GEN WOOD DEPT	KNEEHOLE DESK LEG CLEAT	DWN BY FL. P.T.	QUANT 1	SCALE	DATE 6 - 69	PART NO. 31	DWG NO. KD - 3	MAT'L TO SUIT	REV. 1

12/69

70.02.01.06.A2-0

Name________________________

Date_________________________

CRITERION CHECKLIST: CIRCULAR SAW OPERATION

Tell the difference between circular saws by blade size.

_ 1. Tells the difference between circular saws by blade size.

Identify the major parts of a circular saw by their appearance and function.

_ 1. Identifies the major parts of a circular saw by their appearance and function.

Identify circular saw blades by their appearance and function.

_ Observes ALL [illegible] procedures for proper use of the saw.

_ 1. Identifies circular saw blades by their appearance and function.

Choose the correct saw blade for the type of cut needed and install the blade tightly.

_ 1. Chooses the correct saw blade for the type of cut needed and installs blade tightly.

Cut stock to rough length and width ± 1/16" (or with at least 1/8" allowance where dressing or additional operations are necessary).

_ 1. Chooses specified stock required by print.

_ 2. Sets ripping fence from tooth set toward it.

_ 3. Positions stock cup side down.

_ 4. Cuts off rough lumber from sawmill end cut to expel dirt and checked portion.

_ 5. Keeps height of blade 1/8" above thickness.

_ 6. Cuts length from right hand side of saw blade using miter gage.

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59281

Student: ____________________ File Code: 70.02.01.06.A2-2

Date: ____________________ Date Published: 8-20-74

LAB TEST: CIRCULAR SAW OPERATIONS

1. The [illegible] for all crosscutting operations is the:

   a. stop rod.
   b. splitter.
   c. fence.
   d. miter ga[illegible]

2. The cutoff saw blade is primarily used for:

   a. general ripping and crosscutting.
   b. trimming and cutting plywood.
   c. cutting [illegible]
   d. cutting with the grain on all varieties of wood.

3. The ripsaw blade is used for:

   a. cutting with the grain on all varieties of wood.
   b. general ripping and crosscutting.
   c. trimming and cutting plywood.
   d. cutting against the grain.

4. A groove is a slot cut:

   a. against the grain of the wood.
   b. diagonally across the grain of the wood.
   c. at right angles to the edges grain.
   d. with the grain of the wood.

5. The purpose of the saw-raising handwheel on a circular saw is to:

   a. secure the fence in position.
   b. raise or lower the blade.
   c. raise or lower the table.
   d. hold the blade firmly in place.

File Code: **70.02.01.06.A2-0**

7. Leaves 1/32" of stock for dressing.

8. Turns machine power off when operation is completed.

___ **9. Lowers saw blade after finishing cut.**

Cut stock to finish size ± 1/64" (or with at least 1/32" allowance where dressing operations are necessary).

___ **1. Cuts stock to finish size ± 1/64" (or with at least 1/32" allowance where dressing operations are necessary). Performs to similar criteria as that specified for cutting of rough stock. Checks blade to table for 90 degree adjustment.**

Use correct safety procedures while using the circular saw.

___ **1. Observes ALL critical safety procedures for proper use of the saw.**

Student: ______________________ **File Code:** 70.02.01.06.A2-2

Date: ______________________ **Date Published:** 8-20-74

Mountain-Plains Education & Economic Development Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: CIRCULAR SAW OPERATIONS

1. The part of a circular saw which is used for all crosscutting operations is the:
   a. stop rod.
   b. splitter.
   c. fence.
   d. miter gauge.

2. The cutoff saw blade is primarily used for:
   a. general ripping and crosscutting.
   b. trimming and cutting plywood.
   c. cutting across grain.
   d. cutting with the grain on all varieties of wood.

3. The ripsaw blade is used for:
   a. cutting with the grain on all varieties of wood.
   b. general ripping and crosscutting.
   c. trimming and cutting plywood.
   d. cutting against the grain.

4. A groove is a slot cut:
   a. against the grain of the wood.
   b. diagonally across the grain of the wood.
   c. at right angles to the edges grain.
   d. with the grain of the wood.

5. The purpose of the saw-raising handwheel on a circular saw is to:
   a. secure the fence in position.
   b. raise or lower the blade.
   c. raise or lower the table.
   d. hold the blade firmly in place.

---

gle of a circular saw blade, one would use the:
a. single lock fence.
handwheel.
l.
d. lock

7. A dado head is best used for:
a. ripping.
b. c
c. cutting grooves.
d. crosscutting and ripping.

8. The part of a circular saw which keeps the saw kerf open, thereby preventing

9. Carbide-tipped blades are extremely useful for:
a. h as well as for cut hardboard, plastic laminate, and
d. cutting sheet iron.

10. When one refers to a 12" table saw, he is actually talking about the:
d. diameter of the table.

6. To adjust the angle of a circular saw blade, one would use the:

   a. single lock fence.
   b. saw-raising handwheel.
   c. tilt handwheel.
   d. lock knob.

7. A dado head is best used for:

   a. ripping.
   b. crosscutting.
   c. cutting grooves.
   d. crosscutting and ripping.

8. The part of a circular saw which keeps the saw kerf open, thereby preventing wood from binding on the blade is the:

   a. graduated guide bar.
   b. miter gauge.
   c. fence.
   d. splitter.

9. Carbide-tipped blades are extremely useful for:

   a. high production work as well as for cut hardboard, plastic laminate, and other materials.
   b. cutting sheet metal.
   c. cutting carbides.
   d. cutting sheet iron.

10. When one refers to a 12" table saw, he is actually talking about the:

   a. height of the saw.
   b. size of the table.
   c. diameter of the saw blade.
   d. diameter of the table.

LAP TEST ANSWER KEY: CIRCULAR SAW OPERATIONS

1. d
2. c
3. a
4. d
5. b
6. c
7. c
8. d
9. a
10. c

Mountain-Plains Education & Economic Development Program, Inc.
[illegible] Montana 59231

File Code: 70.02.02.06.A2-2
Date Published: [illegible]

Learning Activity Package

Student:
Date:

PERFORMANCE ACTIVITY: Drill Press Operations

OBJECTIVES:

Identify drill press size, major parts by appearance and the safety precautions to be followed for its use.

State the functions of the drill press's major parts, the procedures for maintenance and procedures for operation.

Adjust a drill press to perform specified operations and use safe procedures to accomplish those operations.

EVALUATION PROCEDURE:

The operation of equipment and the assigned project meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Cabinetmaking and Millwork, Feirer.
Manufacturer's Service Manual

Combination square
Countersink (rosebud)
Measuring tape.
Drill press and bits

PROCEDURE:

1. Read pages 420-441 in Cabinetmaking and Millwork.
2. Follow the procedure outlined on the attached sheets.

Principal Author(s):

[illegible]. Arneson

File Code: 70.02.01.07.A2-0

Date Published: 9/8/75

Mountain-Plains Education &
Economic Development
Program, Inc.

Glasgow AFB, Montana 59231

Learning Activity Package

Student: ______________________

Date: ______________________

PERFORMANCE ACTIVITY: Drill Press Operations

OBJECTIVES:

Identify drill press size, major parts by appearance and the safety precautions to be followed for its use.

State the functions of the drill press's major parts, the procedures for maintenance and procedures for operation.

Adjust a drill press to perform specified operations and use safe procedures to accomplish those operations.

EVALUATION PROCEDURE:

The operation of equipment and the assigned project meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Cabinetmaking and Millwork, Feirer.
Manufacturer's Service Manual

Combination square
Countersink (rosebud)
Measuring tape.
Drill press and bits

PROCEDURE:

1. Read pages 420-441 in Cabinetmaking and Millwork.
2. Follow the procedure outlined on the attached sheets.

Principal Author(s):

R. Arneson

Complete the following steps for drill press operation for construction of kneehole desk leg cleat or for task of equivalent difficulty.

Step 1. Ask your instructor to assign you to a drill press. Be sure the power is off at the power panel.

2. Set the speed control to give you a medium speed.

3. Set the depth stop so that it does not go beyond 1/2" above the table.

4. Lock the quill so that the key chuck is 1/2" above the table.

5. Get the required drill bit and insert it into the key chuck and tighten.

STOP________________INSTRUCTOR CHECK
initials

6. Align the hole in the table with the path of the drill.

7. Get a piece of flat stock and lay it on the table.

8. Adjust the table so that there is room enough for your work to fit between the bit and the flat stock.

9. Readjust your depth stop if necessary.

10. Put on your safety glasses.

STOP________________INSTRUCTOR CHECK
Initials

11. Under the supervision of your instructor, start the machine and drill the required holes and countersinks.

12. Shut off the machine, take out the machine bit, and take the key out of the key chuck. Take the drill bit back to the tool crib.

13. Check all dimensions to within 1/32".

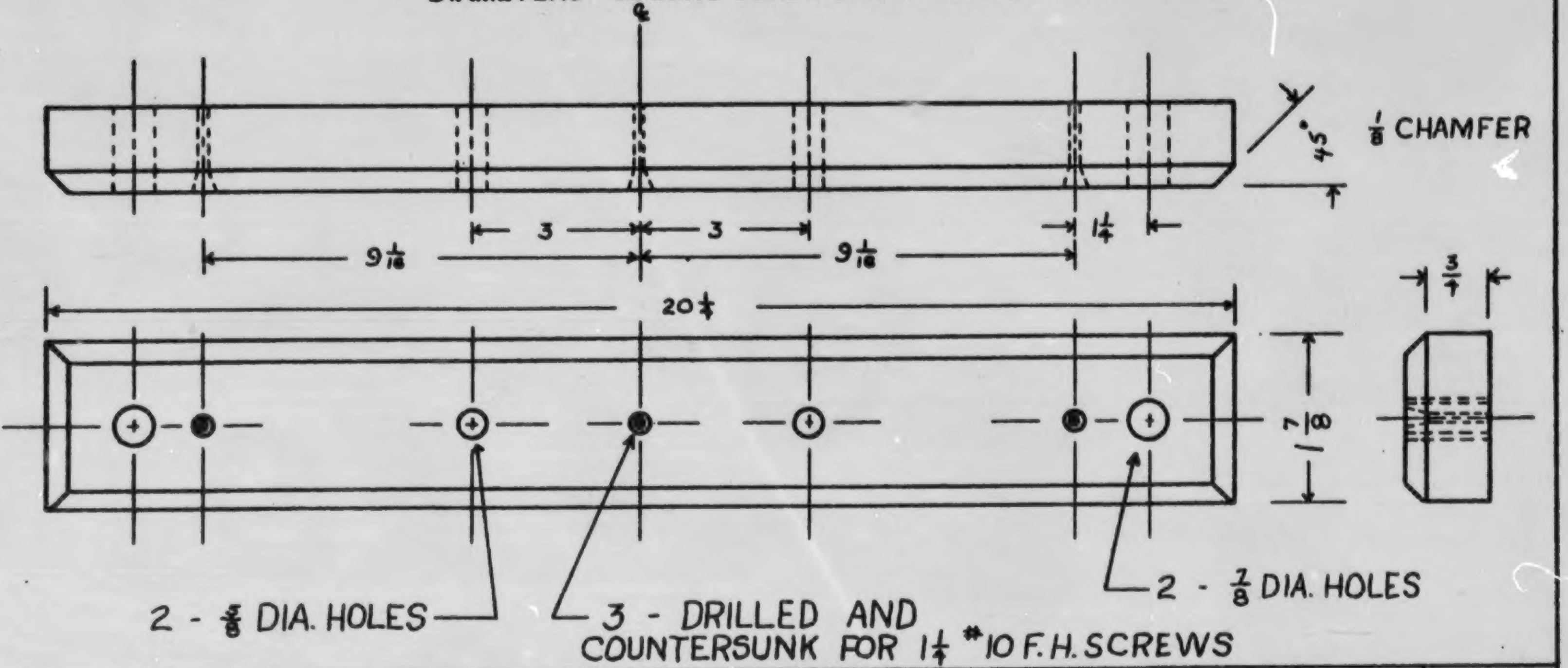
STOP________________INSTRUCTOR CHECK
initials

TOOLS AND MACHINES REQUIRED

JOINTER - THICKNESS PLANER - DRILL PRESS - DRILL - DISK SANDER - SCREWS - SCREWDRIVER
COUNTERSINK - SQUARE - MARKING GAGE - T BEVEL - RULE - STRAIGHTEDGE - DIVIDERS
CIRCULAR SAW - MACHINE BIT - WIRE GAGE - RADIAL SAW - HAND PLANE

ACTIVITIES

DRESSING LUMBER - USING POWER TOOLS - CHAMFERING - LAYING OUT - BORING
DRILLING - COUNTERSINKING - FASTENING WITH WOOD SCREWS - SPACING
DIAMETERS - MAKING SCREW SHANK CLEARANCE HOLES


℄
45°
1/8 CHAMFER
3
3
1 1/4
9 1/16
9 1/16
20 1/4
3/4
1 7/8
2 - 5/8 DIA. HOLES
3 - DRILLED AND COUNTERSUNK FOR 1 1/4 #10 F.H. SCREWS
2 - 7/8 DIA. HOLES

QUINCY VOC-TECH	KNEEHOLE DESK	DWN BY	QUANT.	SCALE	DATE	PART	DWG NO.	MAT'L	REV.
GEN. WOOD DEPT.	LEG CLEAT	FL.	1	~	7-70	NO. 9	KD- 4	TO SUIT	2-70

70.02.01.07.A2-0

Name ____________________

Date ____________________

CRITERION CHECKLIST: DRILL PRESS OPERATION

Identify the parts of the press and state their function.

— 1. Head

— 2. Speed Guide or Pulley Assembly

— 3. Quill Lock

— 4. Feed Lever

— 5. Depth Stop

— 6. Chuck

— 7. Table

State the operating procedures for drilling holes and the safety precautions associated with the drill press.

— 1. Sets to medium speed.

— 2. Sets quill to correct depth above table.

— 3. Uses flat back-up stock between table and bit.

— 4. Uses correct machine bit.

— 5. Spots centers with an awl to center bit.

— 6. Removes chuck key.

Position stock on the table and drill the required holes using proper safety precautions.

— 1. Sharpens machine bit if necessary.

— 2. Drills a clean, smooth hole.

_ 3. Uses correct machine bits.

_ 4. Countersinks hole to specifications.

_ 5. Center to center accuracy within 1/32".

_ 6. Returns machine bits.

Student: ____________________ **File Code:** 70.02.01.07.A2-2

Date: ____________________ **Date Published:** 8-20-74

LAP TEST: DRILL PRESS OPERATIONS

1. The action of the spindle of a drill press can be held at any depth by tightening the:

   a. chuck key.
   b. quill lock.
   c. column lock.
   d. head lock lever.

2. Most work performed on a drill press for woodworking can safely be done at:

   a. slow speed.
   b. medium speed.
   c. high speed.
   d. motor speed.

3. The machine bit is tightened in the chuck with:

   a. a chuck key.
   b. a socket wrench.
   c. an open end wrench.
   d. an allen key.

4. All countersink holes may be drilled to the same depth on a drill press by setting the:

   a. depth stop.
   b. threaded mounting collar.
   c. key chuck.
   d. quill lock.

5. The belt and pulley assembly of a drill press is shielded by the:

   a. tilting table.
   b. belt tension knob.
   c. safety guard.
   d. quill.

6. When using a drill press, the length of a hole can best be gauged by:

   a. adjusting the depth stop lock.
   b. moving the head section.
   c. setting the depth stop.
   d. setting the table.

7. On a drill press having a manual pulley speed change, a lower speed is obtained by placing the belt on the:

   a. large diameter pulley of the motor.
   b. speed change control.
   c. upper steps of the motor pulley.
   d. lower steps of the motor pulley.

8. Holes required by a job are most accurately drilled by laying out the centers and then scoring the centers with:

   a. a nail set.
   b. an awl.
   c. a nail.
   d. a knife.

9. A machine bit can be identified by its:

   a. offset shank.
   b. round straight shank.
   c. tapered shank.
   d. square shank.

10. The spindle or quill of a drill press is set in position by the:

   a. threaded mounting collar.
   b. quill lock.
   c. depth stop.
   d. key chuck.

LAP TEST ANSWER KEY: DRILL PRESS OPERATIONS

1. b
2. a
3. a
4. d
5. c
6. c
7. d
8. b
9. b
10. b

Student: ____________________ File Code: 70.02.01.00.A1-5

Date: ____________________ Date Published: 11-12-74

Family Pay Number: __________ Sex: M F (Circle 1)

UNIT PERFORMANCE TEST: MACHINE PROCESSES/COMPONENT CABINET CONSTRUCTION

OBJECTIVE:

Construct a knee hole desk cleat to given drawing specifications using the listed power tools.

TASK:

Using appropriate tools, equipment and supplies, construct a kneehole desk cleat or similar object to the specifications listed on the plan (s).

ASSIGNMENT:

CONDITIONS:

The student will be allowed to use all tools and equipment commonly found in a typical carpenter shop. He will be allowed to use reference materials commonly used in a carpenter shop. However, he will not be allowed any assistance from the students or the instructor. Also the test must be completed in the specified time designated by the instructor.

RESOURCES:

(See attached page)

RESOURCES:

Tape measure
Combination square
Circular saw
Radial saw
Band saw
Drill press
Jointer
Surfacer
Lumber

Student: ____________________ **File Code:** 70.02.01.00.A1-5

Date: ____________________ **Date Published:** 11-12-74

Family Pay Number: __________ Sex: M F (Circle 1)

PERFORMANCE CHECKLIST:

OVERALL PERFORMANCE: Satisfactory_____ Unsatisfactory_____

	CRITERION Met	 Not Met
Objective 1:		
1. Meets specified dimensions.		
Criterion: Measurements meet specifications on drawing		
2. Uses tools and equipment safely.		
Criterion: No injury to student or damage to equipment		
occurs.		
3. Workmanship.		
Criterion: Product is neat, meeting trade standards		
and specifications.		
4. Student completes job in a reasonable length of time.		
Criterion: Not to exceed two hours.		
5. Uses Jointer properly.		
Criterion: Cabinet Making, Feirer, pp.		
6. Uses thickness planer properly.		
Criterion: Cabinet Making, Feirer, pp.		

Page 4
(Checklist continued)

70.02.01.00.A1-5

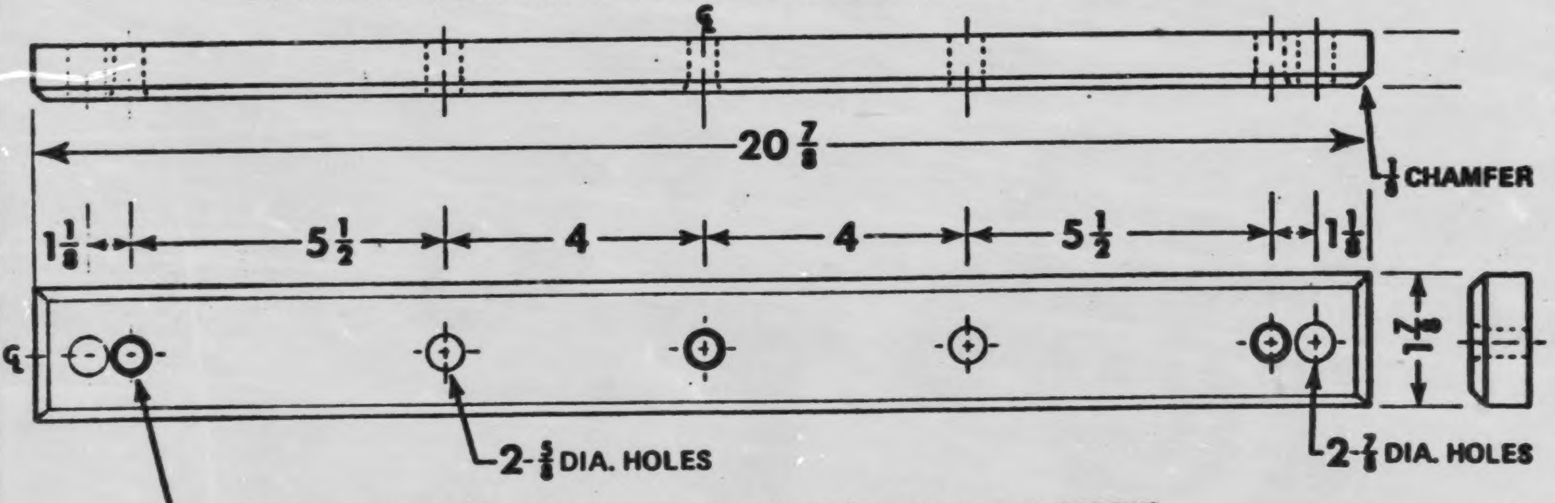
	CRITERION	
	Met	Not Met
7. Uses drill press properly.		
Criterion: Cabinet Making, Feirer, pp.		
8. Uses disc sander properly.		
Criterion: Cabinet Making, Feirer, pp.		
9. Uses circular saw properly.		
Criterion: Cabinet Making, Feirer, pp.		
10. Uses radial saw properly.		
Criterion: Cabinet Making, Feirer, pp.		
Student must complete 9/10 line items for a score of satisfactory.		

TOOLS AND MACHINES TO USE

JOINTER - THICKNESS PLANNER - DRILL PRESS - DRILL - DISC SANDER - SCREWS SCREWDRIVER - COUNTERSINK - SQUARE - MARKING GAGE - T BEVEL - RULE KNIFE - STRAIGHTEDGE - CIRCULAR SAW - DIVIDERS - MACHINE BIT - WIRE - GAGE RADIAL SAW

ACTIVITIES

DRESSING LUMBER - USING POWERTOOLS - CHAMFERING - LAYING OUT - BORING DRILLING - COUNTERSINKING - FASTENING WITH WOOD SCREWS - SPACING ON DIAMETERS - BLUEPRINT READING - SCREW SHANK CLEARANCE HOLES



2-5/8 DIA. HOLES

2-7/8 DIA. HOLES

3 -HOLES DRILLED AND COUNTERSUNK FOR 1½ - NO. 10 F. H. SCREWS

KIND OF WOOD SPECIFIED BY INSTRUCTOR

QUINCY VOC TECH GEN WOOD DEPT	KNEEHOLE DESK LEG CLEAT	DWN BY FL. P.T.	QUANT 1	SCALE	DATE 6 - 69	PART NO. 31	DWG NO. KD - 3	MAT'L TO SUIT	REV. 1

12/69

Student: ______________ File Code: 70.02.01.00.B2-2

Date: ______________ Date Published: 8-20-74

UNIT POST TEST: MACHINE PROCESSES

70.02.01.01

1. The tilt-adjustment mechanism on the bandsaw tilts the:
   - a. bottom wheel.
   - b. blade.
   - c. table.
   - d. top wheel.

2. When one identifies the size of a bandsaw as 20", he means that the:
   - a. size of the table is 20".
   - b. size of the wheel is 20".
   - c. blade is 20" long.
   - d. height of the machine is 20".

3. The tension on a bandsaw blade is tightened or loosened by:
   - a. moving the guide wheel(s).
   - b. adjusting the lower wheel.
   - c. adjusting the upper wheel.
   - d. using the tilt adjustment knob.

4. The blade of a bandsaw can be tested for proper tension by:
   - a. measuring with a tension tester.
   - b. measuring with a dial micrometer.
   - c. pulling or pushing the blade to one side approximately 1/4" with minimum effort.
   - d. measuring with inside-outside calipers.

5. When a bandsaw blade is straight between the upper and lower guides and the gullets are 1/16" from their face, the ball bearing guide wheels are then set:
   - a. 1/64" away from the back of the blade.
   - b. 1/8" away from the back of the blade.
   - c. 1/2" away from the back of the blade.
   - d. up against the blade.

70.02.01.02

6. The size of a thickness planer is specified by the:

   a. length of the blades.
   b. width of the table.
   c. length of the cutterhead.
   d. power of the cutterhead motor.

7. When using a thickness planer, size of thickness to be cut can be roughly calibrated by:

   a. the thickness gauge.
   b. a thickness control valve.
   c. measuring the distance between the table and the head.
   d. using a trial piece of stock.

8. The table of a thickness planer is raised or lowered by using the:

   a. pressure bar adjustment.
   b. bed roll adjustment.
   c. variable speed feed roll control.
   d. elevating handwheel.

9. Which part of the thickness planer is corrugated?

   a. The outfeed roll.
   b. The infeed roll.
   c. The cutterhead.
   d. The lower wedge.

10. When planing stock that is 3/8" or less in thickness, the operator of a thickness planer should:

    a. make the proper adjustment on the pressure bar only.
    b. seek assistance.
    c. use a backing board.
    d. use a hand plane.

70.02.01.03

11. When using a jointer, the operator can cut a bevel by:

    a. raising the rear table.
    b. lowering the rear table.
    c. tilting the fence in or out.
    d. lowering the front table.

70.02.01.03 (continued)

12. To plane stock that is not less than 8" long and is under 12" long, the operator of a jointer should:

    a. obtain assistance from a friend.
    b. use his hands.
    c. use a push stick.
    d. use a hand plane.

13. The size of a jointer is indicated by:

    a. the width of the table.
    b. the number of knives.
    c. the length of the table.
    d. the length of the knives.

14. The part of the jointer which is seldom adjusted is the:

    a. fence.
    b. depth indicator.
    c. front table.
    d. rear table.

15. The part which protects the operator from the blades of a jointer is the:

    a. fence.
    b. fence lock.
    c. front guard.
    d. rabbeting ledge.

70.02.01.04

16. The disc sander table tilts by adjusting the:

    a. stand.
    b. motor.
    c. lock knob.
    d. abrasive disc.

17. To sand ends square, the operator should:

    a. use a coarse abrasive disc.
    b. tilt the table.
    c. adjust the lock knob.
    d. use the miter gauge.

70.02.01.04

18. The end of a board cannot be sanded square to its working surfaces unless:

    a. the miter gauge is set square to the abrasive disc.
    b. the table and miter gauge are set square to the abrasive disc.
    c. the table is set square to the abrasive disc.
    d. the board is held freehand at 180 degrees to the abrasive disc.

19. When applying a new abrasive disc, one should make sure that the adhesive is applied:

    a. only on the edges of the metal disc.
    b. in a uniform coat over the entire surface of the metal disc.
    c. only near the center of the metal disc.
    d. only on a few spots on the metal disc.

20. Air bubbles can be eliminated when applying abrasive paper to a disc by:

    a. applying pressure at only the points where bubbles can be seen.
    b. applying pressure at the edges and rolling it in towards the center with a roller or a flat wooden block.
    c. applying pressure at the center and rolling it out to the edges with a roller or a flat wooden block.
    d. applying pressure only at the edges of the disc.

70.02.01.05

21. To eliminate kickback, a major cause of saw accidents, the operator should hold the stock firmly against which parts of the radial saw when performing all crosscutting operations?

    a. The table base.
    b. The table and guide fence.
    c. The radial arm.
    d. The blade.

22. On which part of a radial saw are the blade and motor unit located?

    a. The yoke handle.
    b. The yoke.
    c. The column.
    d. The track arm.

23. The part of the radial saw which allows the yoke to move forwards and backwards is called the:

    a. yoke.
    b. base.
    c. guide fence.
    d. track arm.

70.02.01.05

24. If the guide fence on a radial saw is scored, charred, or has saw cuts or breaks,:

    a. the guide fence should not be used.
    b. it should be replaced.
    c. it should be repaired.
    d. the damage should be ignored.

25. What is the most distinct advantage of using a radial saw?

    a. It is excellent for cutting curved and irregular shapes.
    b. It is extremely portable.
    c. It is particularly good for fast, convenient, and accurate ripping.
    d. All cutting is done from the top, making layout line clearly visible.

70.02.01.06

26. A groove is a slot cut:

    a. diagonally across the grain of the wood.
    b. at right angles to the edges grain.
    c. against the grain of the wood.
    d. with the grain of the wood.

27. To adjust the angle of a circular saw blade, one would use the:

    a. tilt handwheel.
    b. single lock fence.
    c. saw-raising handwheel.
    d. lock knob.

28. A dado head is best used for:

    a. crosscutting and ripping.
    b. crosscutting.
    c. cutting grooves.
    d. ripping.

29. The part of a circular saw which is used for all crosscutting operations is the:

    a. miter gauge.
    b. stop rod.
    c. fence.
    d. splitter.

70.02.01.06 (continued)

30. The cutoff saw blade is primarily used for:

    a. cutting across grain.
    b. trimming and cutting plywood.
    c. general ripping and crosscutting.
    d. cutting with the grain on all varieties of wood.

70.02.01.07

31. The action of the spindle of a drill press can be held at any depth by tightening the:

    a. chuck key.
    b. column lock.
    c. head lock lever.
    d. quill lock.

32. Most work performed on a drill press for woodworking can safely be done at:

    a. slow speed.
    b. medium speed.
    c. high speed.
    d. motor speed.

33. The speed of a drill press is governed by the:

    a. size of the drill bit used.
    b. length of the column.
    c. belt and pulley arrangement.
    d. pulley brake.

34. Which of the following parts of a drill press is moved up and down either manually or by a gear and rack assembly?

    a. The index pin.
    b. The universal feed lever.
    c. The lower table or base.
    d. The adjustable lamp.

35. On a drill press having a manual pulley speed change, a lower speed is obtained by placing the belt on the:

    a. large diameter pulley of the motor.
    b. speed change control.
    c. upper steps of the motor pulley.
    d. lower steps of the motor pulley.

UNIT POST TEST ANSWER KEY: MACHINE PROCESSES

LAP 01

1. d
2. b
3. c
4. c
5. a

LAP 02

6. c
7. a
8. d
9. b
10. c

LAP 03

11. c
12. c
13. d
14. d
15. c

LAP 04

16. c
17. d
18. b
19. b
20. c

LAP 05

21. b
22. b
23. d
24. b
25. d

LAP 06

26. d
27. a
28. c
29. a
30. a

LAP 07

31. d
32. a
33. c
34. b
35. d

File Code: 70.02.02.00.A2-1

Date Published: 9/24/75

Mountain-Plains Education &
Economic Development
Program, Inc.

Glasgow AFB, Montana 59231

Learning Experience Guide

UNIT: EXTERIOR WALL COVERINGS AND CORNICE

RATIONALE:

Part of the construction finishing skills of a qualified carpenter are those used to complete the exterior walls and cornice of a structure. Knowledge about construction terms, the procedure for component assembly and installation is essential. Assembly and installation skills are also necessary for the construction craftsman. This unit is designed to provide the knowledge and skills necessary for the exterior wall and cornice finishing tasks.

PREREQUISITES:

The prerequisites listed in the course guide apply to this unit.

OBJECTIVE:

Given the construction prints and specifications, tools, equipment and materials, the student will:

1. Sketch cornice details for a job.
2. Determine the material needs for the exterior wall covering.
3. Install various wall coverings and cornice components for a job.

RESOURCES:

Printed Materials

Carpentry. Unit Brotherhood of Carpenters and Joiners of America, Carpenters Printing Plant, Washington, D.C., 1950-1970.
Modern Carpentry. Willis H. Wagner, Goodheart-Willcox Company., Inc., 1973.
Manufacturer's Specifications (assortment).

Principal Author(s): Lyle Leland

Resources: continued

Equipment

Hammer, claw.(16oz)
Level, spirit
Gun, chalking
Jointer
Knife, putty
Knife, utility
Plane, block
Plane, power hand
Saw, hand
Saw, power hand
Saw, radial arm
Saw, saber
Saw, table
Screwdriver, slot set
Square, combination
Square, framing
Square, T-bevel
Stapler, T-3 Bostick
Straight edge
Tape measure (16 ft.)

GENERAL INSTRUCTIONS:

This unit consists of nine Learning Activity Packages (LAPs). Each LAP will provide specific information for completion of a learning activity.

The general procedure for this unit is as follows:

(1) Read the first assigned Learning Activity Package (LAP).
(2) Begin and complete the first assigned LAP.
(3) Take and score the LAP test.
(4) Turn in the LAP test answer sheet.
(5) Determine the reason for any missed items on the LAP test.
(6) Proceed to and complete the next assigned LAP in the unit.
(7) Complete all required LAPs for the unit by following steps 3 through 6.
(8) In this Unit, there are some LAPs that have tests combined with other LAP tests. These combined tests are taken after completing the last LAP covered by the test.
(9) Take the unit tests as described in the Unit LEG "Evaluation Procedures".
(10) Proceed to the next assigned unit.

When performing activities bes sure to follow safe practices.

PERFORMANCE ACTIVITIES:

.01 Horizontal Siding
.02 Vertical Siding in the Gable
.03 Vertical Siding
.04 Caulking Siding
.05 Materials List Preparation
.06 Cornice Details
.07 Fascia
.08 Vent Louvers in the Cornice
.09 Lookouts and Ribbon

EVALUATION PROCEDURE:

When pretesting:

1. The student takes the unit multiple choice pretest.
2. Successful completion is 4 out of 5 items for each LAP part of the pretest.
3. The student then takes a unit performance test if the unit pretest was successfully completed.
4. Satisfactory completion of the performance test is meeting the criteria listed on the performance test.

When post testing:

1. The student takes a multiple choice unit post test and a unit performance test.
2. Successful unit completion is meeting the listed criteria for the performance test.

FOLLOW-THROUGH:

After you have completed reading this unit guide, obtain and read the first assigned LAP. You will be expected to apply the skills and knowledge acquired in previous activities during the completion of steps in the LAP.

Student: ______________________ File Code: 70.02.02.00.A2-2

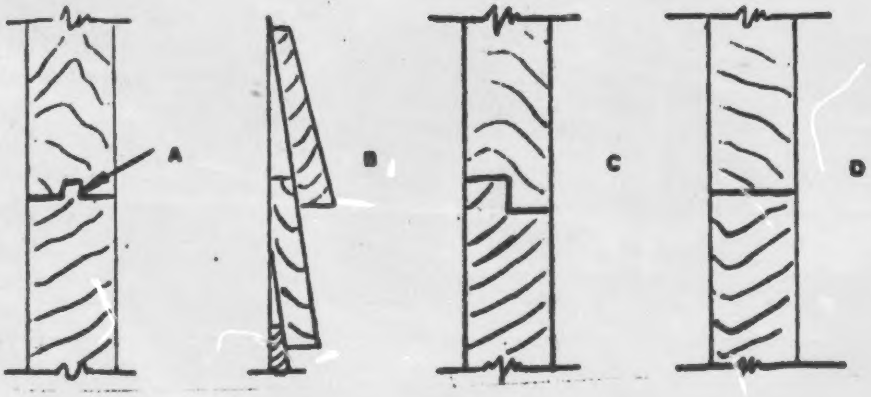
Date: ______________________ Date Published: 8-20-74

UNIT PRETEST: EXTERIOR WALL COVERINGS AND CORNICE

70.02.02.01

1. Refer to the figure provided. The definition of type "A" siding is:

   a. tongue and groove.
   b. bevel.
   c. rustic.
   d. drop.



2. Horizontal siding is used for covering:

   a. table tops.
   b. recreation room walls.
   c. attic ceilings.
   d. outside surfaces of buildings.

3. Horizontal siding should be face-nailed to each:

   a. corner board.
   b. floor joist.
   c. stud.
   d. batten.

4. Using the figure provided in question 1, type "C" siding is:

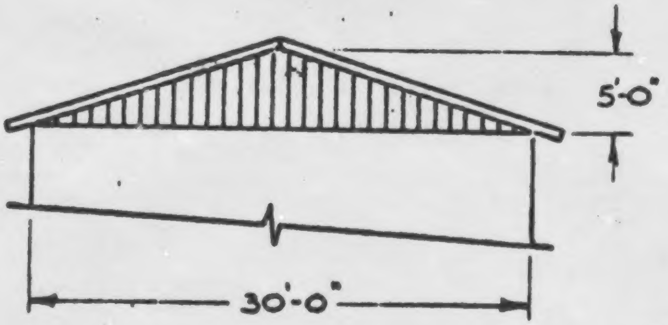
   a. end butt.
   b. clapboard.
   c. bevel.
   d. shiplap.

70.02.02.01 (continued)

5. Using the figure provided in question 1, type "B" siding is:

   a. drop.
   b. clapboard.
   c. wide beveled.
   d. rustic.

70.02.02.02



6. Using the sketch provided, what is the pitch?

   a. 1/6
   b. 4/5
   c. 2/6
   d. 4/12

70.02.02.03

7. Batten strips are nailed to:

   a. centers of siding.
   b. all four corners of the strip.
   c. only one siding board.
   d. the window sills.

8. Vertical wood siding can be used for covering:

   a. subflooring.
   b. outside surfaces of buildings.
   c. stairwells.
   d. porch floors.

70.02.02.03 (continued)

9. Do the new non-wood finishes open new fields in architecture and employment?

   a. possibly
   b. occasionally
   c. yes
   d. no

10. When vertical wood siding deteriorates, it is usually caused by:

   a. poor grade of lumber.
   b. weather and decay.
   c. insects.
   d. oxygen.

70.02.02.04

11. Once the siding has been applied, it is important to apply:

   a. spacer strips.
   b. shingles.
   c. sheeting.
   d. caulking.

12. When using a caulking cartridge for the first time, a craftsman must:

   a. note the manufacturer.
   b. cut off the applicator tip.
   c. check its pressure rating.
   d. check its specific gravity.

13. As you cut farther back from the end of the applicator tip, the bead of caulking will be:

   a. smoother.
   b. larger.
   c. smaller.
   d. the same.

14. A craftsman should cut the applicator tip of a caulking cartridge:

   a. at an irregular shape.
   b. at 90 degrees.
   c. at the base of the tip, nearest the cartridge.
   d. diagonally.

70.02.02.04

15. Caulking should be applied only to wood that has been:

    a. primed.
    b. sanded.
    c. butted.
    d. joined.

70.02.02.05

16. To determine the amount of covering material needed for a given wall, a craftsman must first multiply the length by the:

    a. gable height.
    b. thickness.
    c. window sizes.
    d. height.

17. After obtaining the overall square footage to be covered, a craftsman must then subtract door and window:

    a. heights.
    b. numbers.
    c. areas.
    d. lengths.

18. An important fact to consider when estimating the square footage of wall coverings, is to determine the size difference between nominal and:

    a. total wall coverings.
    b. rough-in wall coverings.
    c. finished wall coverings.
    d. estimated wall coverings.

19. Additional footage amounts must be added for siding that:

    a. is vertical.
    b. has batten strips.
    c. is tongue and grooved.
    d. overlaps.

20. To figure wooden siding needed to cover a gable end, a carpenter must first multiply the length by the height, and then:

    a. divide by two.
    b. multiply by four.
    c. divide by four.
    d. multiply by two.

70.02.02.06

21. Wide cornice overhangs provide protection for:

   a. studs.
   b. walls.
   c. gables.
   d. rain gutters.

22. A strip nailed to the wall that carries the soffit and lookouts is a:

   a. plancier.
   b. ledger.
   c. facia.
   d. trim moulding.

23. Another name for a cornice is a(n):

   a. batten.
   b. channel.
   c. eave.
   d. shingle.

24. The cornice forms a finished connection between the wall and the:

   a. roof edge.
   b. window sill.
   c. ridge and eave.
   d. soffit and ridge board.

25. The cornice is an important element in a structure's total:

   a. construction.
   b. height.
   c. surface.
   d. appearance.

70.02.02.07

26. The main trim member along the edge of the roof is the:

   a. facia.
   b. soffit.
   c. ledger.
   d. lookout.

70.02.02.08

27. Vent louvers are put into soffits to provide:

    a. lower construction cost.
    b. expansion.
    c. better appearance.
    d. air circulation.

28. Vents should have a screen covering to provide protection from:

    a. water.
    b. insects.
    c. mildew.
    d. household pets.

70.02.02.09

29. Some prefabricated soffit systems use steel channels to provide rigidity, thereby eliminating the need for:

    a. ledgers.
    b. facias.
    c. lookouts.
    d. friezes.

30. A narrow board attached to studding or other vertical members of a frame and adding support to joists is called a:

    a. rafter.
    b. facia.
    c. soffit.
    d. ribbon.

UNIT PRETEST ANSWER KEY: EXTERIOR WALL COVERINGS AND CORNICE

LAP 01

1. a
2. d
3. c
4. d
5. b

LAP 02

6. a

LAP 03

7. c
8. b
9. c
10. b

LAP 04

11. d
12. b
13. b
14. d
15. a

LAP 05

16. d
17. c
18. c
19. d
20. a

LAP 06

21. b
22. b
23. c
24. a
25. d

LAP 07

26. a

LAP 08

27. d
28. b

LAP 09

29. c
30. d

File Code: 70.02.02.01.A2-0

Date Published: 9/24/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student:

Date:

PERFORMANCE ACTIVITY: Horizontal Siding

OBJECTIVE:

Install horizontal siding according to specifications.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.
Manufacturer's Specifications.

Claw hammer (16 oz.)
Framing square
Power hand saw (6½" blade)
Straight edge
Tape measure (12 ft.)

PROCEDURE:

1. Read pages 31-40, Unit IV in Carpentry and pages 254-257 in Modern Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete the job.
4. Complete the specified job.
5. Have the job evaluated.
6. Clean up the area.

Principal Author(s): R. Arneson

CHECK LIST: HORIZONTAL SIDING

1. _____ Fastened properly.
2. _____ Neat.
_____ Square.
4. _____ Measurements are accurate to ± 1/8".
5. _____ Procedures are accepted in the industry.
6. _____ Meets specifications listed.

Student: ____________________ File Code: 70.02.02.01.A2-2

Date: ____________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: HORIZONTAL SIDING

1. Horizontal siding is most often installed from the:

   a. top down.
   b. bottom upward.
   c. window sills.
   d. any direction.

2. A priming coat should be applied to wood siding:

   a. after a rainstorm.
   b. not until the siding has been weathered for six months.
   c. within 30 days.
   d. as soon as possible.

3. To fasten siding in place, one should use:

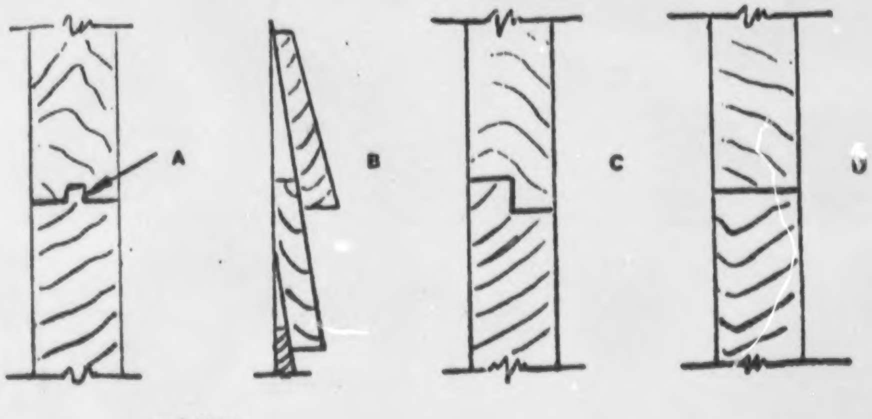
   a. brass screws.
   b. finishing nails.
   c. noncorrosive nails.
   d. large head stell-wire nails.

4. Wood used for exterior siding should be:

   a. planed.
   b. grade 3.
   c. hand hewn.
   d. a select grade.

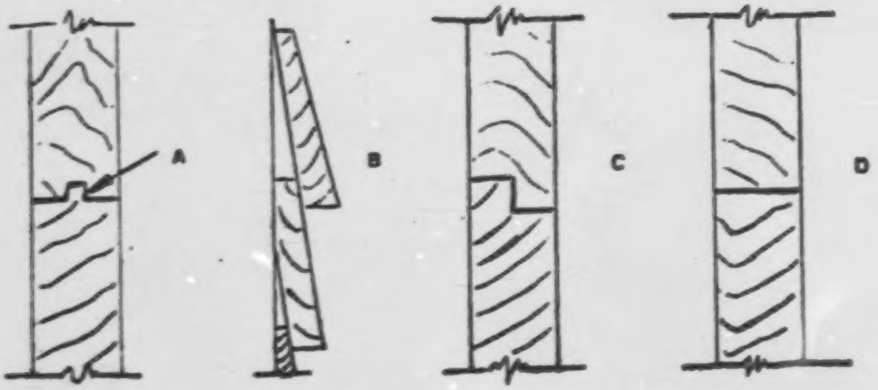
5. Refer to the figure provided. The definition of type "A" siding is:

   a. rustic.
   b. tongue and groove.
   c. bevel.
   d. drop.



6. Using the figure, give the definition of type "B" siding:

   a. clapboard.
   b. rustic.
   c. drop.
   d. wide beveled.



7. Horizontal wood siding is used for covering:

   a. recreation room walls.
   b. table tops.
   c. outside surfaces of buildings.
   d. attic ceilings.

8. Fungi grow in wood when the moisture content is:

   a. average.
   b. excessive.
   c. minimal.
   d. very low.

9. Siding is usually applied over:

   a. sheeting.
   b. plaster.
   c. insulation.
   d. lath strips.

10. One of the most characteristic materials used for exterior siding is:

    a. wood.
    b. iron.
    c. tin.
    d. cement.

LAP TEST ANSWER KEY: HORIZONTAL SIDING

1. b
2. d
3. c
4. d
5. b
6. a
7. c
8. b
9. a
10. a

File Code: 70.02.02.02.A2-0

Date Published: 9/24/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Vertical Siding in the Gable

OBJECTIVE:

Given specifications determine the lengths of and common difference in vertical siding to ± 1/8 inch accuracy.

EVALUATION PROCEDURE:

Siding lengths and differences are accurate to ± 1/8 inch.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Vertical Siding" LAP test and is taken after completing that LAP.

RESOURCES:

Modern Carpentry, Wagner.

Framing square
Measuring tape (12 ft.)

PROCEDURE:

1. Read pages 259 and 260 in Modern Carpentry.
2. Obtain specifications.
3. Obtain the tools.
4. Determine lengths and differences.
5. Have your findings evaluated.
6. Put tools away.

Principal Author(s): R. Arneson

File Code: 70.02.02.03.A2-0

Date Published: 9/24/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________

Date: ____________

PERFORMANCE ACTIVITY: Vertical Siding

OBJECTIVE:

Install vertical siding according to specifications and following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer (16 oz.)
Framing square
Power hand saw (6½" blade)
Measuring tape (12 ft.)
Straight edge

PROCEDURE:

1. Read page 45, Unit IV in Carpentry and pages 259 and 260 in Modern Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the installation evaluated.
6. Clean up the area and put tools away.

Principal Author(s): R. Arneson

Checklist: Vertical Siding

_______ Fastened properly.

_______ Neat.

_______ Square.

_______ Measurements are accurate to ± 1/8 inch.

_______ Procedures are accepted in the industry.

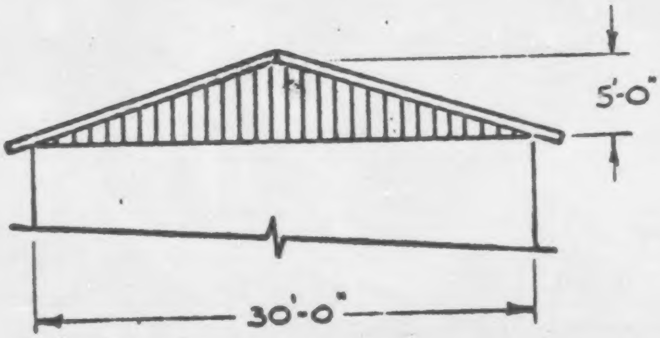
_______ Meets specifications.

Student: ______________________ **File Code:** 70.02.02.02 & .03.A2-2

Date: ______________________ **Date Published:** 8-20-74

LAP TEST: VERTICAL SIDING IN THE GABLE/ VERTICAL SIDING

70.02.02.02



1. Using the sketch provided, could a craftsman figure the square footage of vertical siding needed to cover this gable?

   a. He would need more dimensions.
   b. Possibly.
   c. Yes.
   d. No.

2. Using the sketch provided, what is the pitch?

   a. 1/6
   b. 4/5
   c. 150
   d. 6

70.02.02.03

3. When vertical wood siding deteriorates, it is usually caused by:

   a. weather and decay.
   b. poor grade of lumber.
   c. oxygen.
   d. insects.

70.02.02.03 (continued)

4. Special tools required to work with non-wood siding are:

   a. a drill press.
   b. none.
   c. a router.
   d. a belt sander.

5. Backer blocks should be constructed from:

   a. wood.
   b. aluminum.
   c. cement.
   d. steel.

6. Do the new non-wood finishes open new fields in architecture and employment?

   a. possibly
   b. yes
   c. occasionally
   d. no

7. Matched vertical siding made from solid lumber should preferably be no wider than:

   a. 1 foot.
   b. 8 inches.
   c. 4 inches.
   d. 6 inches.

8. The bottom edges of vertical siding are usually undercut to form a(n):

   a. greater surface area.
   b. water drip.
   c. air pocket.
   d. better appearance.

9. Blocks placed between studs to provide a nailing base for vertical wood siding are called:

   a. joints.
   b. backer blocks.
   c. "X" members.
   d. cross members.

10. Vertical siding is frequently used to feature:

   a. window boxes.
   b. roof peaks.
   c. entrances or gable ends.
   d. foundations.

LAP TEST ANSWER KEY: VERTICAL SIDING IN THE GABLE/VERTICAL SIDING

LAP 02

1. c
2. a

LAP 03

3. a
4. b
5. a
6. b
7. b
8. b
9. b
10. c

File Code: 70.02.02.02.04.A2-0

Date Published: 9/24/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Caulking Siding

OBJECTIVE:

Caulk siding according to specifications and following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Materials List Preparation" LAP test and is taken after completing that LAP.

RESOURCES:

Modern Carpentry, Wagner.
Siding manufacturer's specifications.

Caulking gun
Putty knife.

PROCEDURE:

1. Read pages 249-275 in Modern Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the installation evaluated.
6. Clean up the area and put tools and materials away.

Principal Author(s): R. Arneson

Check List: Caulk Siding

_______ Neat.

_______ Accepted procedural processes followed.

_______ Sealed.

_______ Meets building and manufacturer's specifications.

File Code: 70.02.02.05.A2-0

Date Published: 9/24/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Materials List Preparation

OBJECTIVE:

Estimate and prepare a proposed order for exterior wall covering sections that meets specifications and follows procedures accepted in the industry.

EVALUATION PROCEDURE:

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Modern Carpentry, Wagner.

PROCEDURE:

1. Read pages 259-260 in Modern Carpentry.
2. Obtain specifications.
3. Complete the proposed order on the attached requisition.
4. Hand in the proposed order to the instructor for evaluation.

Principal Author(s): R. Arneson

70.02.02.05.A2-0

MOUNTAIN PLAINS EDUCATION & ECONOMIC DEVELOPMENT PROGRAM, INC.

Box 3078 Glasgow AFB, Montana

STORES REQUISITION

1. To:

Property Control
Bldg. 813

2. From: (Dept.)

Cost Center Acct. No.______

3. Requisiton No.

4. Date

5. Page___Of___

6. Signature of Requestor ________________

7. For Information Call:
Name ____________ Phone ______

8. Deliver To:
Bldg. ____________ Room ______

Request Approved By:
(Supervisor) ________________

Form or Stock Number	Item Description	QTY	U/M	Unit Price
				(Leave Blank)

Student: ______________________ **File Code:** 70.02.02.04 & .05.A2-2

Date: ______________________ **Date Published:** 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: CAULKING SIDING/MATERIALS LIST PREPARATION

70.02.02.04

1. Most caulking used in the building trades is applied with a:

   a. spoon.
   b. putty knife.
   c. caulking rake.
   d. caulking gun.

2. Caulking should only be applied to wood that has been:

   a. butted.
   b. joined.
   c. sanded.
   d. primed.

3. When using a caulking cartridge for the first time, a craftsman must:

   a. check its specific gravity.
   b. cut off the applicator tip.
   c. check its pressure rating.
   d. note the manufacturer.

4. Caulking all seams on wooden siding is used as a primary preventative against:

   a. insects.
   b. wind.
   c. decay.
   d. dust.

5. In present day building trades areas, caulking is applied using cartridges that are:

   a. disposable.
   b. refillable.
   c. recycled.
   d. prefabricated.

70.02.02.05

6. Additional footage amounts must be added for siding that:

   a. is vertical.
   b. is tongue and grooved.
   c. overlaps.
   d. has batten strips.

7. An important fact to consider when estimating the square footage of wall coverings, is to determine the size difference between nominal and:

   a. rough-in wall coverings.
   b. finished wall coverings.
   c. total wall covering.
   d. estimated wall coverings.

8. To figure wooden siding needed to cover a gable end, a carpenter must first multiply the length by the height, and then:

   a. multiply by two.
   b. multiply by four.
   c. divide by four.
   d. divide by two.

9. In estimating the amount of exterior wall coverings for a given building, a craftsman must first study the:

   a. floor plans.
   b. exterior building plans.
   c. zoning ordinances.
   d. plot plan.

10. In covering triangular areas with siding, there is a considerable amount of:

    a. waste.
    b. overlap.
    c. deterioration.
    d. maintenance.

LAP TEST ANSWER KEY: CAULKING SIDING/MATERIALS LIST PREPARATION

LAP 04

1. d
2. d
3. b
4. c
5. a

LAP 05

6. c
7. b
8. d
9. b
10. a

File Code: 70.02.02.06.A2-0

Date Published: 9/24/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ______________________

Date: ______________________

PERFORMANCE ACTIVITY: Cornice Details

OBJECTIVE:

Sketch two cornice details according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

The cornice details meet the criteria listed in the resource.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Lookouts and Ribbon" LAP test and is taken after completing that LAP.

RESOURCES:

Modern Carpentry, Wagner.

PROCEDURE:

1. Read pages 250 and 251 in Modern Carpentry.
2. Obtain specifications.
3. Obtain materials needed.
4. Complete sketches.
5. Have the sketches evaluated.

Principal Author(s): R. Arneson

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

File Code: 70.02.02.07.A2-0
Date Published: 9/24/75

Learning Activity Package

Student: ______________________
Date: ______________________

PERFORMANCE ACTIVITY: Fascia

OBJECTIVE:

Install fascia according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Lookouts and Ribbon" LAP test and is taken after completing that LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer (16 oz.)
Combination square
Measuring tape (12 ft.)
Power hand saw (6½" blade)

PROCEDURE:

1. Read pages 18-22, Unit IV in Carpentry and pages 249-254 in Modern Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the installation evaluated.
6. Clean up the area and put tools and materials.

Principal Author(s): R. Arneson

Check List: Fascia

1. ________ Fastened properly.
2. ________ Neat.
3. ________ Square.
4. ________ Measurements are accurate to ± 1/8 inch.
5. ________ Procedures are accepted in the industry.
6. ________ Meets specifications.

File Code: 70.02.02.08.A2-0

Date Published: 9/24/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ________________

Date: ________________

PERFORMANCE ACTIVITY: Vent Louvers in the Cornice

OBJECTIVE:

Install vent louvers in the cornice according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Lookouts and Ribbon" LAP test and is taken after completing that LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer (16 oz.)
Combination square
Hack saw
Measuring tape (12 ft.)
Power hand saw (6½" blade)

PROCEDURE:

1. Read pages 18-22, Unit IV in Carpentry and pages 253 and 254 in Modern Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the installation evaluated.
6. Clean up the area and put tools and materials away.

Principal Author(s): R. Arneson

Check List: Vent Louvers

1. ________ Fastened properly.
2. ________ Neat.
3. ________ Square.
4. ________ Measurements are accurate to ± 1/8 inch.
5. ________ Procedures are accepted in the industry.
6. ________ Meets specifications.

File Code: 70.02.02.09.A2-0

Date Published: 9/24/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student:

Date:

PERFORMANCE ACTIVITY: Lookouts and Ribbon

OBJECTIVE:

Install lookout and ribbon according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a mutilple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer (16 oz.)
Combination Square
Measuring tape (16 ft.)
Power hand saw (6½" blade)

PROCEDURE:

1. Read pages 18-22, Unit IV in Carpentry and page 250 in Modern Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the installation evaluated.
6. Clean up the area and put tools and materials away.

Principal Author(s): R. Arneson

Check List: Lookouts and Ribbon

_______ Fastened properly.

_______ Neat.

_______ Square.

_______ Measurements are accurate to ± 1/8 inch.

_______ Procedures are accepted in the industry.

_______ Meets specifications listed and identified in the blueprint.

Student: ______________________ File Code: 70.02.02.06 - .09.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: CORNICE DETAILS/FASCIA/VENT LOUVERS IN THE CORNICE/LOOKOUTS AND RIBBON

70.02.02.06

1. The underside enclosed surface of a cornice is called:

   a. sheathing.
   b. rafter.
   c. sheeting.
   d. soffit.

2. Another name for a cornice is a:

   a. channel.
   b. eave.
   c. batten.
   d. shingle.

3. When attaching the soffit, the craftsman should use nails or screws that are:

   a. purchased locally.
   b. expensive.
   c. rust resistant.
   d. inexpensive.

4. Wide cornice overhangs provide protection for:

   a. studs.
   b. walls.
   c. gables.
   d. rain gutters.

5. When using finishing nails, the craftsman should first set the nails, then prime the wood, and then:

   a. apply the final finish coat.
   b. consider the job complete.
   c. paint the nail heads.
   d. putty the holes

70.02.02.07

6. The main trim member along the edge of the roof is the:

   a. ledger.
   b. soffit.
   c. lookout.
   d. facia.

70.02.02.08

7. Vent louvers are put into soffits to provide:

   a. better appearance.
   b. expansion.
   c. air circulation.
   d. lower construction cost.

70.02.02.09

8. Some prefabricated soffit systems use steel channels to provide rigidity, thereby eliminating the need for:

   a. facias.
   b. ledgers.
   c. lookouts.
   d. friezes.

9. A narrow board attached to studding or other vertical members of a frame and adding support to joists is called a:

   a. soffit.
   b. facia.
   c. rafter.
   d. ribbon.

10. One end of a lookout is attached to a ledger, the other end to a:

   a. stud.
   b. facia.
   c. soffit.
   d. rafter.

LAP TEST ANSWER KEY: CORNICE DETAILS/FASCIA/VENT LOUVERS IN THE CORNICE/LOOKOUTS AND RIBBON

LAP 06

1. d
2. b
3. c
4. b
5. d

LAP 07

6. d

LAP 08

7. c

LAP 09

8. c
9. d
10. d

Student: ______________________ File Code: 70.02.02.00.B2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

UNIT POST TEST: EXTERIOR WALL COVERINGS AND CORNICE

70.02.02.01

1. Wood from which siding is made is usually:

   a. hard.
   b. quite soft.
   c. anything available.
   d. medium.

2. Fungi grow in wood when the moisture content is:

   a. very low.
   b. excessive.
   c. minimal.
   d. average.

3. Wood used for exterior siding should be:

   a. planed.
   b. grade 3.
   c. a select grade.
   d. hand hewn.

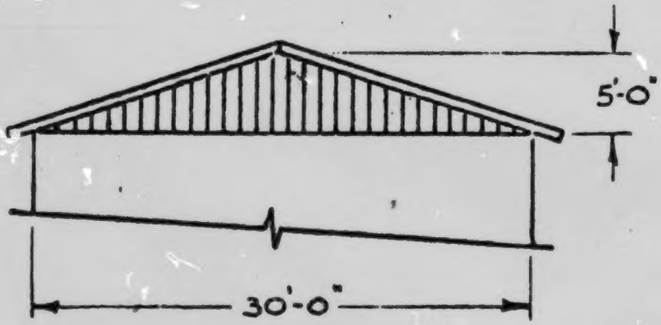
4. Siding is usually applied over:

   a. sheeting.
   b. plaster
   c. lath strips.
   d. insulation.

5. A priming coat should be applied to wood siding:

   a. after a rainstorm.
   b. as soon as possible.
   c. not until the siding has been weathered for six months.
   d. within 30 days.

70.02.02.02



6. Using the sketch provided, what is the slope?

   a. 5/12
   b. 4/12
   c. 2/12
   d. 3/12

70.02.02.03

7. Refer to the sketch provided. What must be installed beneath the vertical gable siding?

   a. freeze board
   b. ledger
   c. drip cap
   d. facia board

8. To cover joints on vertical siding, a craftsman would use:

   a. batten strips.
   b. tongue and groove boards.
   c. metal strips.
   d. furring strips.

9. The bottom edges of vertical siding are usually undercut to form a(n):

   a. better appearance.
   b. greater surface area.
   c. water drip.
   d. air pocket.

70.02.02.03

10. Blocks placed between studs to provide a nailing base for vertical wood siding are called:

    a. cross members.
    b. joints.
    c. "X" members.
    d. backer blocks.

70.02.02.04

11. Caulking all seams on wooden siding is used as a primary preventative against:

    a. dust.
    b. decay.
    c. wind.
    d. insects.

12. Most caulking used in the building trades is applied with a:

    a. caulking rake.
    b. caulking gun.
    c. spoon.
    d. putty knife.

13. Once the siding has been applied, it is important to apply:

    a. spacer strips.
    b. shingles.
    c. sheeting.
    d. caulking.

14. When using a caulking cartridge for the first time, a craftsman must:

    a. check its pressure rating.
    b. check its specific gravity.
    c. cut off the applicator tip.
    d. note the manufacturer.

15. As you cut farther back from the applicator tip, the bead of the caulking will be:

    a. smaller.
    b. unaffected.
    c. smoother.
    d. larger.

70.02.02.05

16. In estimating the amount of exterior wall coverings for a given building, a craftsman must first study the:

    a. exterior building plans.
    b. plot plan.
    c. zoning ordinances.
    d. floor plans.

17. To determine the amount of covering material needed for a given wall, a craftsman must first multiply the length by the:

    a. height.
    b. thickness.
    c. gable height.
    d. window sizes.

18. After obtaining the overall square footage to be covered, a craftsman must then subtract door and window:

    a. lengths.
    b. numbers.
    c. areas.
    d. heights.

19. To figure wooden siding needed to cover a gable end, a carpenter must first multiply the length by the height, and then:

    a. multiply by two.
    b. multiply by four.
    c. divide by four.
    d. divide by two.

20. In covering triangular areas with siding, there is a considerable amount of:

    a. overlap.
    b. deterioration.
    c. maintenance.
    d. waste.

70.02.02.06

21. The cornice forms a finished connection between the wall and the:

    a. ridge and eave.
    b. roof edge.
    c. soffit and ridge board.
    d. window sill.

70.02.02.06 (continued)

22. A strip nailed to the wall that carries the soffit and lookouts is a:

    a. plancier.
    b. trim moulding.
    c. ledger.
    d. facia.

23. The underside enclosed surface of a cornice is called:

    a. sheathing.
    b. rafter.
    c. sheeting.
    d. soffit.

24. When attaching the soffit, the craftsman should use nails or screws that are:

    a. expensive.
    b. inexpensive.
    c. purchased locally.
    d. rust resistant.

25. Wide cornice overhangs provide protection for:

    a. walls.
    b. rain gutters.
    c. gables.
    d. studs.

70.02.02.07

26. The main trim member along the edge of the roof is the:

    a. facia.
    b. soffit.
    c. ledger.
    d. lookout.

70.02.02.08

27. Vent louvers are put into soffits to provide:

    a. air circulation.
    b. expansion.
    c. better appearance.
    d. lower construction cost.

70.02.02.08

28. Vents should have a screen covering to provide protection from:

    a. household pets.
    b. water.
    c. insects.
    d. mildew.

70.02.02.09

29. Some prefabricated soffit systems use steel channels to provide rigidity, thereby eliminating the need for:

    a. friezes.
    b. facias.
    c. lookouts.
    d. ledgers.

30. A narrow board attached to studding or other vertical members of a frame and adding support to joists is called a:

    a. ribbon.
    b. soffit.
    c. rafter.
    d. facia.

UNIT POST TEST ANSWER KEY: EXTERIOR WALL COVERINGS AND CORNICE

LAP 01

1. b
2. b
3. c
4. a
5. b

LAP 02

6. b

LAP 03

7. c
8. a
9. c
10. d

LAP 04

11. b
12. b
13. d
14. c
15. d

LAP 05

16. a
17. a
18. c
19. d
20. d

LAP 06

21. b
22. c
23. d
24. d
25. a

LAP 07

26. a

LAP 08

27. b
28. c

LAP 09

29. c
30. a

Student: ______________________ File Code: 70.02.02.00.A1-5

Date: ______________________ Date Published: 11-12-74

Family Pay Number: __________ Sex: M F (Circle 1)

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

UNIT PERFORMANCE TEST: EXTERIOR WALL COVERINGS AND CORNICE

OBJECTIVE:

Given a set of specifications and materials, the student will be able to construct a gable end.

TASK:

Given a set of specifications, construct a gable end to scale, including a barge rafter, facia and soffit as determined by the instructor.

ASSIGNMENT:

CONDITIONS:

The student will be given a set of blueprints and specifications. He will be required to scale down the blueprint dimensions to the size indicated by the instructor. He will complete this activity using tools, equipment, supplies and resource materials commonly found in a carpenter shop. He will not be allowed to obtain assistance from the instructor or the other students.

RESOURCES:

(See attached page)

RESOURCES:

Claw hammer
Tape measure
Framing square
Level
"T" bevel square
Combination square
Hand saw
Block plane
Slot screwdriver
Power hand saw
Power plane
Drill
Saber
Table saw
Radial saw
Jointer
Stapler
Utility knife
Assortment of fastners and lumber

Student: ____________________ File Code: 70.02.02.00.A1-5

Date: ____________________ Date Published: 11-12-74

Family Pay Number: __________ Sex: M F (Circle 1)

Mountain-Plains Education & Economic Development Program, Inc.
Glasgow AFB, Montana 59231

PERFORMANCE CHECKLIST:

OVERALL PERFORMANCE: Satisfactory_____ Unsatisfactory_____

	CRITERION	
	Met	Not Met
Objective 1:		
1. Rafters are cut properly.		
Criterion: Rafters are cut to given pitch and includes		
seat cut and tail cut.		
2. Gable studs are cut and installed properly.		
Criterion: Gable studs are cut according to standards		
accepted in the industry. (FHA standards and blue-		
print specifications.)		
3. Roof trim is installed properly.		
Criterion: Roof trim, including facia and soffit are neat		
and fit according to accepted trade practices. (FHA		
standards and blueprint specifications.)		
4. Uses proper materials.		
Criterion: Materials meet specifications and FHA		
standards.)		

	CRITERION	
	Met	Not Met
5. Uses tools and equipment safely.		
Criterion: No injury to student or damage to tools and		
equipment occurs. Complete to OSHA regulations.		
6. Student completes job in allotted time.		
Criterion: Allotted time, eight hours.		
Student must complete 5/6 line items to score a satisfactory.		

File Code: 70.02.03.00.A2-1

Date Published: 10/8/75

Mountain-Plains Education &
Economic Development
Program, Inc.

Glasgow AFB, Montana 59231

Learning Experience Guide

UNIT: WINDOWS AND TRIM

RATIONALE:

In finishing a structure, part of the tasks for a carpenter includes the installation of windows and trim. Quality installation depends upon the craftsman's knowledge about procedure and specifications for the given structure. This knowledge and the application practice is designed into this Unit.

PREREQUISITES:

Prerequisites for the course apply to the unit. (see course guide)

OBJECTIVES:

The student will determine the type of windows required from construction prints and specifications.

Windows will be installed according to the prints and specifications using appropriate tools, equipment and materials.

RESOURCES:

Printed Material

Blueprint Reading and Sketching, Carpentry Trades, Residential. Delmar Publishers, 1957.
Carpentry. United Brotherhood of Carpenters and Joiners of America, Carpenters Printing Plant, Washington, D.C., 1950-1970.
Modern Carpentry. Willis H. Wagner, Goodheart-Willcox Company, Inc., 1973.
Manufacturer's Catalog Collection.
Manufacturer's Directions Collection.

Equipment

Hammer, claw (13 & 16 oz.)
Level, spirit
Jointer
Knife, putty
Knife, utility
Nail set
Plane, block
Plane, power hand
Sander, power hand, belt
Saw, coping
Saw, electric portable
Saw, hand
Saw, mitering
Screwdriver, slot set

Principal Author(s): Lyle Leland

Resources: Equipment: Continued

Square, combination
Square, framing
Square, T-Bevel
Stapler, T-3 Bostick
Tape measure (16 ft.)

GENERAL INSTRUCTIONS:

This Unit consists of six Learning Activity Packages (LAPs). Each LAP will provide specific information for completion of a learning activity.

The general procedure for this unit is as follows:

(1) Read the first assigned Learning Activity Package (LAP).
(2) Begin and complete the first assigned LAP.
(3) Take and score the LAP test.
(4) Turn in the LAP test answer sheet.
(5) Determine the reason for any missed items on the LAP test.
(6) Proceed to and complete the next assigned LAP in the unit.
(7) Complete all required LAPs for the unit by following steps 3 through 6.
(8) In this Unit, there are some LAPs that have tests combined with other LAP tests. These combined tests are taken after completing the last LAP covered by the test.
(9) Take the unit tests as described in the Unit LEG "Evaluation Procedures".
(10) Proceed to the next assigned unit.

Carefully follow safe practices when performing activities.

PERFORMANCE ACTIVITIES:

.01 Window Types
.02 Window Orders
.03 Window Installation
.04 Large Window Framing
.05 Window Trimming
.06 Window Insulation

EVALUATION PROCEDURE:

When pretesting:

1. The student takes the unit multiple-choice pretest.
2. Successful completion is 4 out of 5 items for each LAP part of the pretest.
3. The student then takes a unit performance test if the unit pretest was successfully completed.
4. Satisfactory completion of the performance test is meeting the criteria listed on the performance test.

When post testing:

1. The student takes a multiple-choice unit post test and a unit performance test.
2. Successful unit completion is meeting the listed criteria for the performance test.

FOLLOW-THROUGH:

When you finish reading this unit guide, obtain and read the LAP for the first assigned performance activity. Apply previously acquired knowledge and skills to accomplish the activities.

Student: ____________________ File Code: 70.02.03.00.A2-2

Date: ____________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

UNIT PRETEST: WINDOWS AND TRIM

70.02.03.01

1. A casement window consists of:

   a. two sashes that slide up and down in a window frame.
   b. a sash that is hinged on the side and swings outward.
   c. a sash that is hinged along the bottom and swings inward.
   d. two or more sashes that move horizontally within a window frame.

2. A double-hung window can be held in any given vertical position by:

   a. an extension brace.
   b. locking pegs.
   c. any object capable of supporting the weight of the window glass.
   d. a friction fit against the frame.

3. A sash that is hinged along the bottom and swings inward is called a:

   a. double-hung window.
   b. casement window.
   c. hopper window.
   d. horizontal sliding window.

4. Which of the following windows has a low weather-tightness value and should, therefore, only be used in porches and breezeways in northern climates?

   a. casement
   b. hopper
   c. jalousie
   d. awning

5. Which of the following window types require screens and storm sash to be mounted on the inside?

   a. double-hung and awning
   b. horizontal sliding and jalousie
   c. hopper and casement
   d. awning and casement

70.02.03.02

The following three questions refer to blueprint 3/7 in the "Building Trades Blueprints for Carpenters."

6. What style of window is type #2?

   a. Casement
   b. Andersen "Flexivent"
   c. Fixed Sidelight
   d. Double-hung

7. What style of window is used in the garage?

   a. Andersen "Flexivent"
   b. Fixed Sidelight
   c. Casement
   d. Double-hung

8. How many windows of type #1 are used in this structure?

   a. 10
   b. 11
   c. 9
   d. 12

9. The dividers used to segment window sash openings are called:

   a. muntins.
   b. aprons.
   c. stools.
   d. mullions.

10. A slender, vertical support between multiple windows is called a:

   a. muntin.
   b. jamb.
   c. mullion.
   d. sash.

70.02.03.03

11. When should the manufacturer's diagonal braces or spacer strips be removed from windows?

   a. Just before installation.
   b. After installation is complete.
   c. During installation.
   d. Immediately after the window has been unpacked from shipping carton.

70.02.03.03 (continued)

12. What is the minimum spacing required above the head of a window for plumbing and leveling?

    a. 1/2"
    b. 1/8"
    c. 3/4"
    d. 1"

13. Why is it best to install windows consisting of two layers of glass separated by an air space?

    a. Provides greater strength to the window area.
    b. Prolongs the life of the glass surface.
    c. Increases visibility.
    d. Reduces heat loss in winter and heat gain in summer.

14. The protective edging around the window pane is called the:

    a. sash.
    b. jamb.
    c. stool.
    d. mullion.

15. A straight strip of wood used for various vertical reference heights is called a:

    a. tape measure.
    b. story pole.
    c. story measure.
    d. thermopane.

70.02.03.04

16. The plate glass of large insulating units are usually:

    a. 1/4" thick.
    b. 3/8" thick.
    c. 1/2" thick.
    d. 5/8" thick.

17. In modern construction, large fixed glass areas are usually fitted with:

    a. a single pane of glass.
    b. four panes of glass.
    c. a single pane of glass with a plexiglass reinforcer.
    d. double panes of glass.

70.02.03.04 (continued)

18. The bottom portion of a window is more commonly known as the:

    a. stool.
    b. bead.
    c. sill.
    d. jamb.

19. If a window has not been primed at the factory, this mistake should be corrected:

    a. before installation.
    b. after installation.
    c. during installation.
    d. after completion of the entire building or structure.

20. The installation of a fixed glass panel is:

    a. different from that of regular windows and, therefore, requires special tools.
    b. different from that of regular windows.
    c. the same as that of regular windows, but requires special tools.
    d. the same as that of regular windows.

70.02.03.05

21. The horizontal member that laps over the sill and extends beyond the side casing is the:

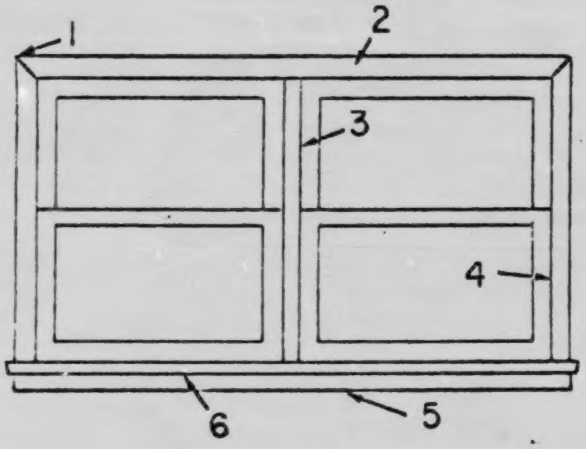
    a. mullion.
    b. apron.
    c. miter.
    d. stool.

22. If a window has no stool or apron, and the trim runs all the way around the window, this is called:

    a. casing.
    b. miter framing.
    c. picture framing.
    d. teardrop casing.

70.02.03.05 (continued)

The following two questions refer to the illustration below.



23. Which of the following terms properly identifies item #1?

    a. head casing
    b. miter
    c. stool
    d. apron

24. Item #6 is a:

    a. miter.
    b. mullion.
    c. stool.
    d. apron.

70.02.03.06

25. When insulation is compressed too tightly between the window and trimmer, which of the following will result?

    a. The window opening will enlarge.
    b. Nothing will happen.
    c. The window will be distorted by pressure.
    d. The bearing partitions will weaken.

UNIT PRETEST ANSWER KEY: WINDOWS AND TRIM

LAP 01

1. b
2. d
3. c
4. c
5. d

LAP 02

6. d
7. d
8. b
9. a
10. c

LAP 03

11. b
12. c
13. d
14. a
15. b

LAP 04

16. a
17. d
18. c
19. a
20. d

LAP 05

21. d
22. c
23. b
24. c

LAP 06

25. c

File Code: 70.02.03.01.A2-0

Date Published: 10/8/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student:

Date:

PERFORMANCE ACTIVITY: Window Types

OBJECTIVES:

Given building specifications, make a list of window types according to manufacturer's specifications and identify their characteristics and usage.

EVALUATION PROCEDURE:

Listed window types meet both building and manufacturer's specifications.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Blueprint Reading and Sketching, Carpentry Trades, Residential, Delmar Publishers.
Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.
Manufacturer's Catalog.

PROCEDURE:

1. Read pages 215-233 in Modern Carpentry and pages 1-7, Unit VI in Carpentry.
2. Obtain specifications.
3. Identify in a manufacturer's catalog the windows referred to in the specifications.
4. Prepare a list of windows specified.
5. Have the list evaluated.
6. Take the LAP test.

Principal Author(s): R. Arneson

Student: ______________________ File Code: 70.02.03.01.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: WINDOW TYPES 'PES

1. A double-hung window consists of:

   a. two sashes that slide up and down in a window frame.
   b. two or more sashes that move horizontally within a window frame.
   c. a sash that is hinged on the side and swings outward.
   d. one or more sashes that are hinged at top and swing out at bottom.

2. The window that is used most extensively by carpenters for its economy, simplicity of operation, and adaptability to many architectural designs is a(n):

   a. awning window.
   b. casement window.
   c. jalousie window.
   d. double-hung window.

3. The only window not used for ventilation purposes is a:

   a. casement window.
   b. fixed window.
   c. jalousie window.
   d. awning window.

4. Most window frames used in residences are made from:

   a. a magnesium-steel alloy.
   b. aluminum.
   c. steel.
   d. ponderosa pine.

5. Which of the following window types require screens and storm sash to be mounted on the inside?

   a. horizontal sliding and jalousie
   b. awning and casement
   c. double-hung and awning
   d. hopper and casement

6. Consideration of outside clearance must be given to:

   a. hopper windows.
   b. jalousie windows.
   c. double-hung windows.
   d. both casement and awning windows.

7. What are the three basic window classifications?

   a. revolving, fixed and rotating
   b. sliding, rotating, and fixed
   c. swinging, rotating, and revolving
   d. sliding, swinging, and fixed

8. A casement window consists of:

   a. a sash that is hinged on the side and swings outward.
   b. two or more sashes that move horizontally within a window frame.
   c. two sashes that slide up and down in a window frame.
   d. a sash that is hinged along the bottom and swings inward.

9. A double-hung window can be held in any given vertical position by:

   a. any object capable of supporting the weight of the window glass.
   b. locking pegs.
   c. a friction fit against the frame.
   d. an extension brace.

10. Which of the following windows has a low weather-tightness value and should, therefore, only be used in porches and breezeways in northern climates?

    a. hopper
    b. casement
    c. jalousie
    d. awning

LAP TEST ANSWER KEY: WINDOW TYPES ES

1. a
2. d
3. b
4. d
5. b
6. d
7. d
8. a
9. c
10. c

File Code: 70.02.03.02.A2-0

Date Published: 10/8/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Window Orders

OBJECTIVE:

Estimate and prepare a proposed order for windows according to building and manufacturer's specifications.

EVALUATION PROCEDURE:

The proposed order for windows meet the specifications for building and manufacturer.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Window Installation" LAP test that is taken after completing that LAP.

RESOURCES:

Manufacturer's Catalog.

PROCEDURE:

1. Obtain building specifications.
2. Obtain manufacturer's catalog.
3. Prepare the proposed order.
4. Have the order evaluated.
5. Go to the next LAP.

Principal Author(s): R. Arneson

File Code: 70.02.03.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student:

Date:

PERFORMANCE ACTIVITY: Window Installation

OBJECTIVE:

Install a window according to building and manufacturer's specifications following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.
Manufacturer's Catalog

Claw hammer (16 oz.)
Spirit level

PROCEDURE:

1. Read pages 215-233 in Modern Carpentry and pages 1-7, Unit VI in Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

Check List: WINDOW INSTALLATION

_______ Fastened properly.

_______ Neat.

_______ Square.

_______ Measurements are accurate to ± 1/8 inch.

_______ Procedures are accepted in the industry.

_______ Meets specifications.

Student: ______________________ File Code: 70.02.03.02 & .03.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: WINDOW ORDERS/WINDOW INSTALLATION

70.02.03.02

The first three (3) questions refer to blueprint 3/7 in the "Building Trades Blueprints for Carpenters."

1. What size window is used in the bathroom?

   a. 4' - 6" x 3' - 2 3/16"
   b. 1' - 0" x 6' - 8"
   c. 1' - 8" x 3' - 2"
   d. 2' - 0" x 3' - 2"

2. What style of window is used in the garage?

   a. fixed sidelight
   b. casement
   c. Andersen "Flexivent"
   d. double-hung

3. How many windows of type #1 are used in this structure?

   a. 11
   b. 3
   c. 9
   d. 13

4. A slender vertical support between multiple windows is called a:

   a. sash.
   b. mullion.
   c. muntin.
   d. jamb.

5. Which of the following items determines the amount of window trim needed?

   a. Size of window being used.
   b. Thickness of wall finishing.
   c. Type of siding.
   d. Size of rough opening.

70.02.03.03

6. Immediately before the final nailing of the window frame, the craftsman should:

   a. check the operation of the ventilating sash.
   b. place wedge blocks under the sill.
   c. drive nails temporarily into the top of the side casing.
   d. plumb the side jambs with a level.

7. The protective edging around the window pane is called the:

   a. sash.
   b. jamb.
   c. mullion.
   d. stool.

8. Why is it best to install windows consisting of two layers of glass separated by an air space?

   a. Prolongs the life of the glass surface.
   b. Increases visibility.
   c. Reduces heat loss in winter and heat gain in summer.
   d. Provides greater strength to the window area.

9. A straight strip of wood used for various vertical reference heights is called a:

   a. tape measure.
   b. mullion.
   c. story pole.
   d. thermopane.

10. What part of a window is designed to carry rain water out over the window casing?

   a. sash
   b. head casing
   c. drip cap
   d. sill

LAP TEST ANSWER KEY: WINDOW ORDERS/WINDOW INSTALLATION

LAP 02

1. d
2. d
3. a
4. b
5. a

LAP 03

6. a
7. a
8. c
9. c
10. c

File Code: 70.02.03.04.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________

Date: ____________

PERFORMANCE ACTIVITY: Large Window Framing

OBJECTIVE:

Install a picture window in a frame according to specifications following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Window Trimming" and "Window Insulation" LAP test and is taken after completed "Window Insulation" LAP.

RESOURCES:

Manufacturer's Directions

Claw hammer (13 oz.)
Putty knife
Spirit level

PROCEDURE:

1. Review the Manufacturer's Directions.
2. Obtain the tools and materials needed to complete this job.
3. Complete the job.
4. Have the installation evaluated.
5. Clean up the area and put tools and supplies away.
6. Go to the next LAP.

Principal Author(s): R. Arneson

Check List: Large Window Framing

________ Fastened properly.

________ Neat.

________ Square.

________ Measurements are accurate to ± 1/8 inch.

________ Procedures are accepted in the industry.

________ Meets specifications.

File Code: 70.02.03.05.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: __________

Date: __________

PERFORMANCE ACTIVITY: Window Trimming

OBJECTIVE:

Trim a window according to specifications following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Window Insulation" LAP test and is taken after completing that LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.
Manufacturer's Directions.

Claw hammer (13 oz.)
Combination square
Mitering saw
Nail set
T-Bevel square

PROCEDURE:

1. Read pages 215-233 in Modern Carpentry and page 8, Unit VI in Carpentry.
2. Obtain the tools and materials needed to complete this job.
3. Complete the job.
4. Have the installation evaluated.
5. Clean up the area and put tools and supplies away.
6. Go to the next LAP.

Principal Author(s): R. Arneson

Check List: Window Trimming

_______ Fastened properly.

_______ Neat.

_______ Square.

_______ Measurements are accurate to ± 1/8 inch.

_______ Procedures are accepted in the industry.

_______ Meets specifications.

File Code: 70.02.03.06.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ______

Date: ______

PERFORMANCE ACTIVITY: Window Insulation

OBJECTIVE:

Insulate a window following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Screwdriver
Utility knife

PROCEDURE:

Steps

1. Obtain the tools listed above and insulation materials.
2. Cut strips of insulating material suitable for placing in the space around the installed window.
3. Place the insulation in the spaces and compress it using a screwdriver or other suitable tool.
4. Continue placing insulation in firmly until spaces are filled.
5. Have the installation evaluated.
6. Take the LAP test.

Principal Author(s): R. Arneson

CHECKLIST: Window Insulation

____________ Neat.

____________ Procedures are accepted in the industry.

____________ Meets specifications.

Student: ______________________ File Code: 70.02.03.04 - .06.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: LARGE WINDOW FRAMING/WINDOW TRIMMING/ WINDOW INSULATION

70.02.03.04

1. In modern construction, large fixed glass areas are usually fitted with:

   a. a single pane of glass with a plexiglass reinforcer.
   b. double panes of glass.
   c. a single pane of glass.
   d. four panes of glass.

2. The installation of a fixed glass panel is:

   a. the same as that of regular windows.
   b. different from that of regular windows.
   c. different from regular windows and, therefore, requires special tools.
   d. the same as that of regular windows, but requires special tools.

3. The bottom portion of a window is more commonly known as the:

   a. stool.
   b. sill.
   c. jamb.
   d. head.

4. If a window has not been primed at the factory, this mistake should be corrected:

   a. after installation.
   b. during installation.
   c. after completion of the entire building.
   d. before installation.

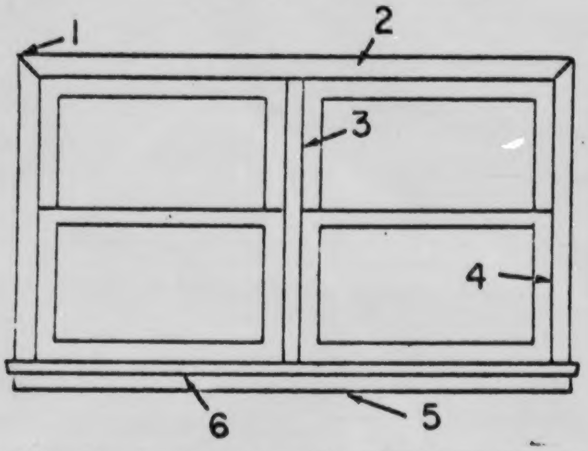
70.02.03.05

5. If a window has no stool or apron, and the trim runs all the way around the window, this is called:

   a. teardrop casing.
   b. miter framing.
   c. picture framing.
   d. casing.

70.02.03.05 (continued)

The following three questions refer to the illustration.



6. Which of the following terms correctly identifies item #3?

   a. head casing
   b. stool
   c. mullion trim
   d. side casing

7. Which of the following terms correctly identifies item #4?

   a. miter
   b. mullion trim
   c. side casing
   d. apron

8. Which of the following terms properly identifies item #1?

   a. stool
   b. miter
   c. apron
   d. head casing

9. When installing window trim, which of the following items is the last member to be applied?

   a. head casing
   b. stool
   c. apron
   d. side casing

10. Which of the following materials is generally used to insulate around windows?

   a. fiberglass
   b. wood
   c. metal
   d. plexiglass

LAP TEST ANSWER KEY: LARGE WINDOW FRAMING/WINDOW TRIMMING/ WINDOW INSULATION

LAP 04

1. b
2. a
3. b
4. d

LAP 05

5. c
6. c
7. c
8. b
9. c

LAP 10

10. a

Student: ______________________ File Code: 70.02.03.00.B2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

UNIT POST TEST: WINDOWS AND TRIM

70.02.03.01

1. The purpose of a fixed window unit is to provide:

   a. a decrease in cost.
   b. daylight and a view of the outdoors.
   c. extra support for the bearing partitions.
   d. increased ventilation.

2. A double-hung window consists of:

   a. one or more sashes that are hinged at top and swing out at bottom.
   b. two sashes that slide up and down in a window frame.
   c. a sash that is hinged on the side and swings outward.
   d. two or more sashes that move horizontally within a window frame.

3. The window that is used most extensively by carpenters for its economy, simplicity of operation, and adaptability to many architectural designs is a:

   a. double-hung window.
   b. casement window.
   c. awning window.
   d. jalousie window.

4. The only window not used for ventilation purposes is a:

   a. casement window.
   b. fixed window.
   c. awning window
   d. jalousie window.

5. An awning window consists of:

   a. a sash that is hinged along the bottom and swings inward.
   b. series connecting horizontal glass slats held by metal frame at each end.
   c. one or more sashes that are hinged at top and swing out at bottom.
   d. two or more sashes that move horizontally within a window frame.

70.02.03.02

6. A slender, vertical support between multiple windows is called a:

   a. sash.
   b. jamb.
   c. mullion.
   d. muntin.

7. The dividers used to segment window sash openings are called:

   a. mullions.
   b. stools.
   c. muntins.
   d. aprons.

The following three (3) questions refer to blueprint 3/7 in the Building Trades Blueprints for Carpenters.

8. How many windows of type #1 are used in this structure?

   a. 10
   b. 11
   c. 9
   d. 12

9. What style of window is type #2?

   a. casement
   b. double-hung
   c. Andersen "Flexivent"
   d. fixed sidelight

10. What size windows are located in the living room?

   a. two 10' - 9" x 4' - 3 1/8" and two 2' - 0" x 2' - 6"
   b. three 1' - 8" x 3' - 2" and three 3' - 1 3/4" x 3' - 3 3/16"
   c. two 4' - 6" x 3' - 2 3/16" and three 10' - 9" x 4' - 3 1/8"
   d. three 10' - 9" x 6' - 2 1/8" and two 2' - 6" x 3' - 10"

70.02.03.03

11. Immediately before the final nailing of the window frame, the craftsman should:

   a. check the operation of the ventilating sash.
   b. place wedge blocks under the sill.
   c. plumb the side jambs with a level.
   d. drive nails temporarily into the top of the side casing.

70.02.03.03 (continued)

12. What part of a window is designed to carry rain water out over the window casing?

    a. sill
    b. sash
    c. head casing
    d. drip cap

13. What is the minimum spacing required for each side of a window during installation?

    a. 1/2"
    b. 1/8"
    c. 3/4"
    d. 1"

14. When should the manufacturer's diagonal braces or spacer strips be removed from windows?

    a. During installation.
    b. Immediately after the window has been unpacked from shipping carton.
    c. Just before installation.
    d. After Installation is complete.

15. Why is it best to install windows consisting of two layers of glass separated by an air space?

    a. Reduces heat loss in winter and heat gain in summer.
    b. Provides greater strength to the window area.
    c. Prolongs the life of the glass surface.
    d. Increases visibility.

70.02.03.04

16. Can insulating glass units be altered by the craftsmen at the building site?

    a. No.
    b. Yes.
    c. Possibly, but only if minor changes are needed.
    d. Occasionally.

17. Why are wedge blocks used in window installations?

    a. To raise the frame to the correct height as marked on story pole.
    b. To provide extra strength for the window pane.
    c. To fill large window installation openings.
    d. To keep the cripple studs aligned.

70.02.03.04 (continued)

18. In modern construction, large fixed glass areas are usually fitted with:

   a. four panes of glass.
   b. a single pane of glass.
   c. double panes of glass.
   d. a single pane of glass with a plexiglass reinforcer.

19. The installation of a fixed glass panel is:

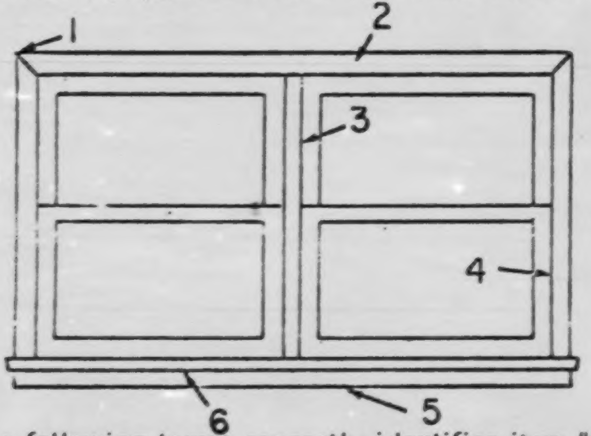
   a. different from that of regular windows and, therefore, requires special tools.
   b. different from that of regular windows.
   c. the same as that of regular windows, but requires special tools.
   d. the same as that of regular windows.

20. If a window has not been primed at the factory, this mistake should be corrected:

   a. after installation.
   b. before installation.
   c. during installation.
   d. after completion of the entire building or structure.

70.02.03.05

The following three (3) questions refer to the illustration below:



21. Which of the following terms correctly identifies item #4?

   a. side casing
   b. apron
   c. miter
   d. mullion trim

70.02.03.05 (continued)

22. Identify item #2.

    a. apron
    b. side casing
    c. head casing
    d. mullion trim

23. Identify item #5.

    a. miter
    b. apron
    c. stool
    d. head casing

24. If a window has no stool or apron, and the trim runs all the way around the window, this is called:

    a. casing.
    b. teardrop casing.
    c. picture framing.
    d. miter framing.

70.02.03.06

25. When insulation is compressed too tightly between the window and trimmer, which of the following will result?

    a. The window will be distorted by pressure.
    b. Nothing will happen.
    c. The window opening will enlarge.
    d. The bearing partitions will weaken.

UNIT POST TEST ANSWER KEY: WINDOWS AND TRIM

LAP 01

1. b
2. b
3. a
4. b
5. c

LAP 02

6. c
7. c
8. b
9. b
10. d

LAP 03

11. a
12. d
13. a
14. d
15. a

LAP 04

16. a
17. a
18. c
19. d
20. b

LAP 05

21. a
22. c
23. b
24. c

LAP 06

25. a

Student: ______________________ **File Code:** 70.02.03.00.A1-5

Date: ______________________ **Date Published:** 11-12-74

Family Pay Number: ____________ Sex: M F (Circle 1)

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

UNIT PERFORMANCE TEST: WINDOWS AND TRIM

OBJECTIVE:

Given the materials and a plan, the student will be able to install a window according to manufacturer's specifications and accepted trade standards.

TASK:

Install a window to specifications.

ASSIGNMENT:

CONDITIONS:

The student will complete this test in a typical residence on a wall section, and he will be allowed to use all tools, equipment, supplies and resource texts commonly used in a shop. The task must be completed in the designated time with no assistance from the instructor or other students.

RESOURCES:

(See attached page)

RESOURCES:

Claw hammer
Tape measure
Framing square
Level
"T" bevel square
Combination square
Hand saw
Block plane
Coping saw
Power hand saw
Power plane
Sander, belt
Stapler
Utility knife
Assortment of fastners and lumber

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Student: ____________________ **File Code:** 70.02.03.00.A1-5

Date: ____________________ **Date Published:** 11-12-74

Family Pay Number: ____________ Sex: M F (Circle 1)

PERFORMANCE CHECKLIST:

OVERALL PERFORMANCE: Satisfactory_____ Unsatisfactory_____

	CRITERION	
	Met	Not Met
Objective 1:		
1. Uses proper materials.		
Criterion: Meets specifications and FHA standards.		
2. Uses tools and equipment safely.		
Criterion: No injury to student or damage to equipment.		
3. Properly assembled.		
Criterion: Window is plumb, square, level and operates		
according to manufacturer's specifications or to ± 1/16".		
4. Student completes job in a reasonable length of time.		
Criterion: Not to exceed two hours.		
5. Hardware is properly installed.		
Criterion: To manufacturer's specifications.		
6. Centered in the Rough Opening.		
Criterion: To ± 1/8".		
7. Window height is accurate.		

	CRITERION	
	Met	Not Met
Criterion: To blueprint specifications.		
To obtain an overall score of satisfactory the student must		
meet criterion on 6/7 line items.		

File Code: 70.02.04.00.A2-1

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Experience Guide

UNIT: INTERIOR COVERINGS

RATIONALE:

Completion of structure tasks includes the installation of interior coverings and trims. These installations require a number of procedural skills and the knowledge to produce the desired finished job. Instruction practice and application of necessary knowledge about inside structure finishing are designed into this Unit. To acquire these skills will meet part of the desired qualifications as a carpenter.

PREREQUISITES:

The prerequisites for this Unit are the same as those listed in the Course LEG.

OBJECTIVE:

You will install specified interior coverings and trims to complete the job as given on construction prints and in specifications with needed tools, equipment and materials.

RESOURCES:

Printed Materials

Cabinetmaking and Millwork. John L. Ferier, Charles A. Bennett Company, Inc., 1970.
Carpentry. United Brotherhood of Carpenters and Joiners of America, Carpenters Printing Plant, Washington, D.C., 1950-1970.
Modern Carpentry. Willis H. Wagner, Goodheart-Willcox Company, Inc., 1973.
Manufacturer's Directions (collection of) Products.

Equipment

Bar, flat rip
Bastard, fine mill
Bits, auger set
Bits, laminate trimmer
Brace, hand
Compass
Cutter, platform tile
Drill, electric hand
Hammer, claw (13 & 16 oz.)
Inclinometer
Level, spirit
Line, chalk
Bits, twist set

Resources: Equipment Continued

Gun, glue
Knife, utility
Nail set
Plane, power hand
Rollers, laminate
Router, portable
Router, trim (plastic laminate)
Sander, belt portable
Saw, coping
Saw, hack
Saw, hand crosscut
Saw, power hand
Saw, power miter
Saw, radial arm
Saw, saber
Saw, table
Screwdriver, slot set
Shears, tinners
Spreader, mastic
Square, combination
Square, framing
Straight edge
Stapler, T--5 Bostick
Stud finder
Tape measure (12 & 16 ft.)

GENERAL INSTRUCTIONS:

This Unit consists of 15 Learning Activity Packages (LAPs). Each LAP will provide specific information for completion of a learning activity.

The general procedure for this Unit is as follows:

(1) Read the first assigned Learning Activity Package (LAP).
(2) Begin and complete the first assigned LAP.
(3) Take and score the LAP test.
(4) Turn in the LAP test answer sheet.
(5) Determine the reason for any missed items on the LAP test.
(6) Proceed to and complete the next assigned LAP in the unit.
(7) Complete all required LAPs for the unit by following steps 3 through 6.
(8) In this Unit, there are some LAPs that have tests combined with other LAP tests. These combined tests are taken after completing the last LAP covered by the test.
(9) Take the unit tests as described in the Unit LEG "Evaluation Procedures".
(10) Proceed to the next assigned unit.

PERFORMANCE ACTIVITIES:

.01 Sheetrock
.02 Sheetrock Metal Trim
.03 Acoustical Tile
.04 Wall Paneling
.05 Tile or Linoleum
.06 Base
.07 Cove Moldings
.08 Panel Moldings
.09 Parts of a Stair
.10 Cutting a Stair Jack
.11 Treads and Risers
.12 Stairway Handrail
.13 Closet Shelf and Rod
.14 Insulation
.15 Plastic Laminate

EVALUATION PROCEDURE:

When pretesting:

1. The student akes the unit multiple-choice pretest.
2. Successful completion is 4 out of 5 items for each LAP part of the pretest.
3. The student then takes a unit performance test if the unit was successfully completed.
4. Satisfactory completion of the performance test is meeting the criteria listed on the performance test.

When post testing:

1. The student takes a multiple-choice post test and a unit performance test.
2. Successful unit completion is meeting the listed criteria for the performance test.

FOLLOW-THROUGH:

After reading this Unit LEG, go to the first assigned Learning Activity Package (LAP) listed on your Student Progress Record (SPR). Use the knowledge and skills you have thus far acquired.

Student: ______________________ File Code: 70.02.04.00.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

UNIT PRETEST: INTERIOR COVERINGS

70.02.04.01

1. When making straight cuts across the width or length of a piece of sheetrock, the craftsman should first:
   - a. smooth the cut with a file or coarse sandpaper.
   - b. mark the sheet with a pencil and snap core by using downward pressure.
   - c. cut the paper back.
   - d. score the face with a knife pulled along a straight edge.
2. When taping sheetrock, how many coats of joint compound should be used?
   - a. two
   - b. four
   - c. three
   - d. one
3. Sheetrock has a:
   - a. corrosive core.
   - b. combustible core.
   - c. noncombustible core.
   - d. flammable core.
4. Irregular shapes and curves can be cut in sheetrock by using a:
   - a. router.
   - b. circular saw.
   - c. bandsaw.
   - d. electric sabre saw.

70.02.04.02

5. Interior corners of sheetrock, both horizontal and vertical, are reinforced with:
   - a. reinforcing tape.
   - b. metal corner beads.
   - c. double nailing.
   - d. molly screws.

70.02.04.03

6. Acoustical tile is attached to:

   a. trusses.
   b. cripple rafters.
   c. furring strips.
   d. ceiling joists.

7. Since it is essential that the lower face of the furring strips be level with each other, this alignment should be checked with:

   a. the human eye.
   b. a suitable length of 2 x 4.
   c. a carpenter's level.
   d. a steel rule.

8. When nailing furring strips to ceiling joists, the carpenter should use:

   a. 8D nails.
   b. 10D nails.
   c. wood screws.
   d. 12D nails.

9. After the first furring strip has been positioned, placement of the next strip will be determined by the:

   a. space available.
   b. on center spacing.
   c. design established.
   d. width of the border tile.

10. The standard size acoustical tile is:

   a. 16 x 32 in.
   b. 12 x 24 in.
   c. 24 x 24 in.
   d. 12 x 12 in.

70.02.04.04

11. What thickness of plywood can be attached directly to wall studs with nails special adhesives?

   a. 3/8"
   b. 1/2"
   c. 3/4"
   d. 1/4"

70.02.04.04 (continued)

12. Specially treated hardboard paneling used in kitchens or bathrooms must have:

    a. a flat finish.
    b. a low moisture absorption rate.
    c. a high moisture absorption rate.
    d. a low decibel rating.

13. To secure narrow widths of tongue and groove paneling, the craftsman should use a:

    a. 8D finish nail and drive at 35 degree angle into base of tongue on point.
    b. 6D finish nail and drive at 30 degree angle into base of tongue on point.
    c. 8D finish nail and drive at 45 degree angle into base of tongue on point.
    d. 6D finish nail and drive at 45 degree angle into base of tongue on point.

14. Before plywood panels are installed, they should:

    a. be measured several times to assure proper fit.
    b. become adjusted to the temperature and humidity of the room.
    c. be joined together in order to ease installation.
    d. be moistened or dampened to prevent splitting during nailing.

15. When nailing 1 x 2" furring strips for paneling or wall studs, they should be placed:

    a. 16" O.C.
    b. 18" O.C.
    c. 14" O.C.
    d. 12" O.C.

70.02.04.05

16. To determine the main centerline for a floor tile installation, the mechanic should use a:

    a. yard stick.
    b. T-square.
    c. chalk line.
    d. straight edge.

17. Why must the underlayment material be as smooth as possible before tile or linoleum is installed?

    a. To prevent irregularities or rough surfaces from showing up later.
    b. To prevent a build up of moisture.
    c. To provide an air pocket to cushion the flooring materials.
    d. To lessen the amount of adhesive to be used.

70.02.04.05 (continued)

18. Tile and/or linoleum adhesive should be allowed to set until it:

    a. hardens.
    b. begins to stick to your fingers.
    c. begins to feel tacky, but not stick to your fingers.
    d. can be easily moved about.

19. Which of the following describes the proper method for installing linoleum?

    a. Glueing it in thirds.
    b. Glueing it in fourths.
    c. Glueing it all at one time.
    d. Glueing it in halves.

20. How should floor tiles be positioned in relation to one another?

    a. Overlapped with the corners in line.
    b. Overlapped with the centers matching the corners.
    c. Butted squarely with the corners in line.
    d. Butted with the centers matching the corners.

70.02.04.06

21. The interior trim member used to seal the joint between the baseboard and the finished floor is the:

    a. base shoe.
    b. apron.
    c. baseboard.
    d. cove mold.

22. Baseboard joints at internal corners should be:

    a. ship-lapped.
    b. tongue and grooved.
    c. coped.
    d. mitered.

23. When is the base shoe usually installed?

    a. Before the baseboard is installed.
    b. After the baseboard is installed.
    c. Before the baseboard corners are mitered.
    d. At the same time the baseboard is installed.

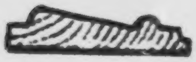
70.02.04.07

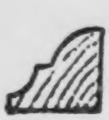
24. Moulding with a concave profile used primarily where two members meet at a right angle is called:

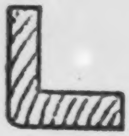
    a. quarter-round molding.
    b. ogee molding.
    c. cove molding.
    d. corner molding.

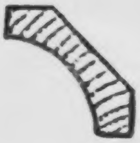
70.02.04.08

25. Which of the following depicts a panel molding?


A

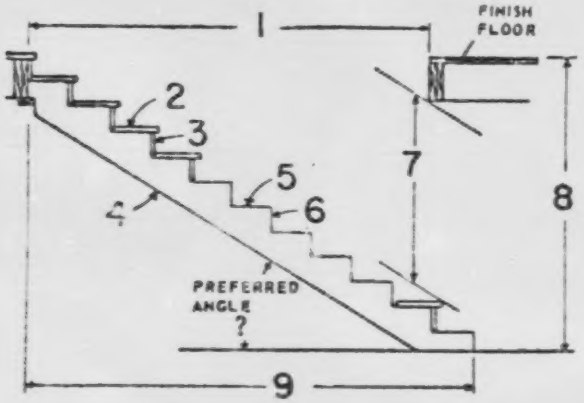

B


C


D

70.02.04.09

The following three (3) questions refer to the illustration below?



26. Item 8 is properly known as the:

    a. total run.
    b. total rise.
    c. stairwell rough opening.
    d. headroom.

70.02.04.09 (continued)

27. Identify item 2.

a. unit run
b. riser board
c. tread board
d. unit rise

28. Item 9 is properly known as the:

a. headroom.
b. total rise.
c. stairwell rough opening.
d. total run.

29. From the standpoint of design, the three types of stairs are:

a. straight run, winding, and platform.
b. winding, service, and main.
c. winding, main, and straight run.
d. service, platform, and straight run.

30. Stairs that run continuously from one level to another without landings or turns are called:

a. straight run.
b. platform.
c. winding.
d. service.

70.02.04.10

31. The most vital factor in stair design is the:

a. height of the unit to be constructed.
b. relationship between the rise and run.
c. weight of the materials to be used.
d. style designated by the architectural plan.

32. If a stair is physically tiring and causes extra strain on the leg muscles, the problem is:

a. too many stairs.
b. an insufficient number of platforms of landings.
c. insufficicent headroom.
d. an incorrect rise-run combination.

70.02.04.11

33. The part of the tread that provides space for the toe of the foot is the:

    a. riser.
    b. nosing.
    c. cove molding.
    d. stoop.

34. Given a rise of 90", determine the minimum run.

    a. 143"
    b. 137"
    c. 140"
    d. 151"

35. Given a rise of 90", determine the rise height.

    a. 7 1/16"
    b. 6 15/16"
    c. 7 1/8"
    d. 6 1/2"

70.02.04.12

36. A handrail assembly of newels, balusters, and rail is called the:

    a. open stringer.
    b. balustrade.
    c. closed stringer.
    d. turnout.

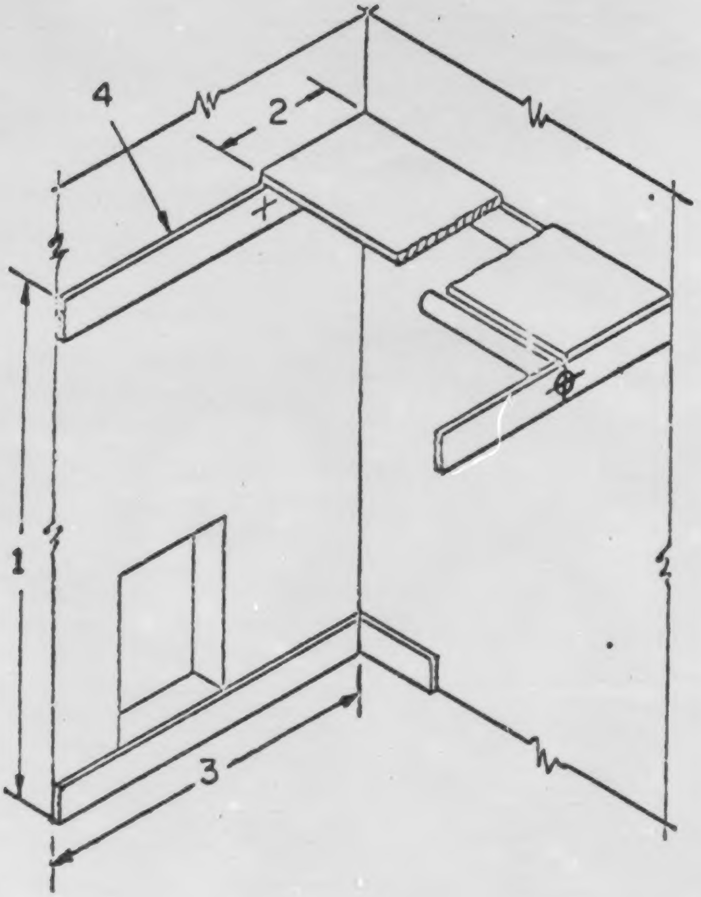
70.02.04.13

37. Which of the following should be installed first when constructing a closet shelf and rod assembly?

    a. one hook strip
    b. the shelf
    c. all the hook strips
    d. the clothes pole

The following three (3) questions refer to the illustration provided on the following page.

70.02.04.13 (continued)



38. Ordinarily, dimension 1 is:

    a. 6' 0" and higher.
    b. 5' 7" - 6' 0".
    c. 4' 10" - 5' 2".
    d. 5' 3"- 5' 7".

39. Dimension 2 should be a minimum of:

    a. 16".
    b. 10".
    c. 24".
    d. 12".

70.02.04.13 (continued)

40. For a closet, dimension #3 should be at least:

    a. 2'.
    b. 3'.
    c. 4'.
    d. 6'.

70.02.04.14

41. Heated areas, especially in cold climates, should be surrounded with insulation by placing it in the:

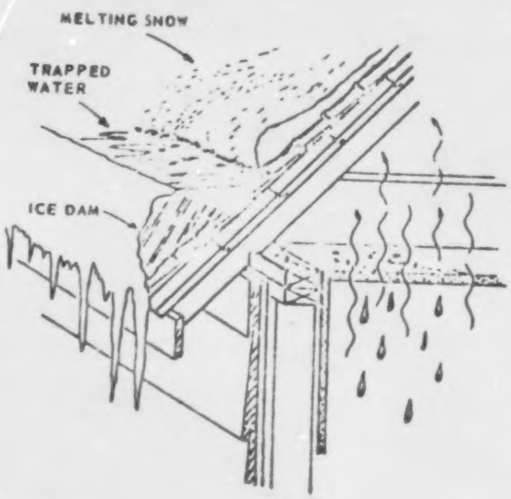
    a. walls and ceiling only.
    b. walls only.
    c. floors and walls only.
    d. walls, ceiling and floors.

42. When installing blanket insulation in walls, the craftsman should begin stapling at:

    a. the bottom and proceed upward.
    b. the top and proceed downward.
    c. the middle and proceed upward, and then downward.
    d. any point he selects.

43. The illustration provided below depicts which of the following symptoms?

    a. Lack of insulation in ceiling.
    b. Too much insulation in roof.
    c. Lack of insulation in walls.
    d. Too much insulation in ceiling.



70.02.04.14 (continued)

44. Refer to figure 1 below. The transmission of heat from one molecule to another within a given material or from one material to another when they are held in direct contact is called:

- a. condensation.
- b. radiation.
- c. conduction.
- d. convection.

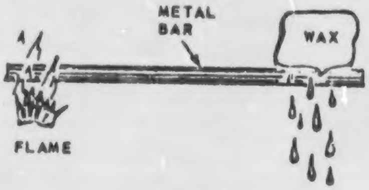


Fig. 1

45. Which of the following types of insulation is generally furnished in rolls or strips of convenient length and in various widths suited to standard stud and joist spacing?

- a. rigid
- b. reflective
- c. blanket
- d. loose fill

70.02.04.15

46. Plastic laminate consists of:

- a. craft paper.
- b. glued craft paper.
- c. glued craft paper put in a high pressure press.
- d. craft paper and graphite particles.

47. Which of the following symptoms indicates that contact cement has been applied too thinly?

- a. dull spots
- b. shiny spots
- c. glossy areas
- d. lumps

48. Of all the types of edge treatments for plastic laminates used today, the most popular is:

- a. extruded metal edge.
- b. edge banding.
- c. postformed edge.
- d. shaped and dropped wood edge.

70.02.04.15 (continued)

49. Which of the following adhesives should be used for on-the-job laminate applications?

    a. resin glue
    b. casein glue
    c. contact cement
    d. polyvinyl cement

50. When a metal edge with T moldings is to be applied to plastic laminate, which of the following must first be accomplished?

    a. Heat is applied to the metal edge.
    b. Contact cement is applied.
    c. A slot is cut in the edge of the core.
    d. The molding is held in place with masking tape.

UNIT PRETEST ANSWER KEY: INTERIOR COVERINGS

LAP 01

1. d
2. c
3. c
4. d

LAP 02

5. a

LAP 03

6. c
7. c
8. a
9. d
10. b

LAP 04

11. a
12. b
13. d
14. b
15. a

LAP 05

16. c
17. a
18. c
19. d
20. c

LAP 06

21. a
22. c
23. d

LAP 07

24. c

LAP 08

25. a

LAP 09

26. b
27. c
28. d
29. a
30. a

LAP 10

31. b
32. d

LAP 11

33. b
34. a
35. b

LAP 12

36. b

LAP 13

37. a
38. d
39. d
40. a

LAP 14

41. d
42. b
43. a
44. c
45. c

LAP 15

46. c
47. a
48. b
49. c
50. c

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

File Code: 70.02.04.01.A2-0

Date Published: 10/9/75

Learning Activity Package

Student: ____________

Date: ____________

PERFORMANCE ACTIVITY: Sheetrock

OBJECTIVE:

Install sheetrock according to specifications following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Sheetrock Metal Trim" LAP test and is taken after completing that LAP.

RESOURCES:

Modern Carpentry, Wagner.

Claw hammer (16 oz.)
Straight edge
Utility knife
Tape measure (12 ft.)

PROCEDURE:

1. Read pages 313 and 314 in Modern Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the instructor evaluate the installation.
6. Clean up the area and put tools away.
7. Go to the next LAP.

Principal Author(s): R. Arneson

CHECKLIST: Sheetrock

____________ Fastened properly.

____________ Procedures are accepted in the industry.

____________ Meets specifications.

File Code: 70.02.04.02.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student:

Date:

PERFORMANCE ACTIVITY: Sheetrock Metal Trim

OBJECTIVE:

Install sheetrock trim according to specifications.

EVALUATION PROCEDURE:

Installation meets criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Modern Carpentry, Wagner.

Claw hammer (16 oz.)
Tinners shears or hacksaw

PROCEDURE:

1. Read pages 313 and 314 in Modern Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

Check List: Sheetrock Metal Trim

______________ Fastened properly.

______________ Neat.

______________ Meets specifications.

Student: ______________________ File Code: 70.02.04.01 & .02.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: SHEETROCK/SHEETROCK METAL TRIM

70.02.04.01

1. Which of the following ring nails is recommended for securing sheetrock to wall framing?

    a. 1/8" head and 2" long
    b. 1/2" head and 1 1/2" long
    c. 1/4" head and 1 1/4" long
    d. 1/2" head and 2" long

2. To assure exact measurements when using sheetrock, the carpenter should:

    a. make 2 readings, one on each side of the panel.
    b. make 2 readings on the same side of the panel.
    c. make 2 readings on one side, then 2 more on the other side.
    d. make a good reading on one side of the panel.

3. Since screws hold sheetrock more securely than nails, ceiling spacing can be extended to:

    a. 14" and side walls to 18".
    b. 12" and side walls to 16".
    c. 15" and side walls to 17".
    d. 10" and side walls to 12".

4. Irregular shapes and curves can be cut in sheetrock by using a:

    a. circular saw.
    b. router.
    c. electric sabre saw.
    d. bandsaw.

5. Which method of securing sheetrock to wall framing should be used in order to produce a sturdy wall that is somewhat resistant to impact sounds?

    a. adhesive
    b. ring nails
    c. wallboard screws
    d. double nailing

70.02.04.01 (continued)

6. Why has the use of dry wall materials, such as sheetrock, steadily increased in modern construction?

   a. It has less drying time.
   b. It is not easily available.
   c. It is a great time saving factor.
   d. It increases construction cost.

7. What shape of adhesive bead should be applied when joining two pieces of wallboard on a framing member?

   a. horizontal
   b. vertical
   c. zigzag
   d. double horizontal

8. When taping sheetrock, how many coats of joint compound should be used?

   a. three
   b. two
   c. four
   d. one

9. Sheetrock has a:

   a. flammable core.
   b. combustible core.
   c. corrosive core.
   d. noncombustible core.

70.02.04.02

10. Exterior corners of sheetrock are reinforced with:

   a. metal corner beads.
   b. molly screws.
   c. double nailing.
   d. reinforcing tape.

LAP TEST ANSWER KEY: SHEETROCK/SHEETROCK METAL TRIM

LAP 01

1. c
2. a
3. b
4. c
5. a
6. c
7. c
8. a
9. d

LAP 02

10. a

File Code: 70.02.04.03.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Acoustical Tile

OBJECTIVE:

Install acoustical tile according to specifications following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.
Manufacturer's Directions

Claw hammer (16 oz.)
Chalk line
Combination square
Hand saw
Spirit level
T-5 Stapler
Table saw

PROCEDURE:

1. Read pages 322-327 in Modern Carpentry or page 19, Unit VI in Carpentry and read manufacturer's directions.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

Check List: Acoustical Tile

__________ Fastened properly.

__________ Neat.

__________ Square.

__________ Measurements are accurate to ± 1/8 inch.

__________ Procedures are accepted in the industry.

__________ Meets specifications.

Student: ____________________ File Code: 70.02.04.03.A2-2

Date: ____________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: ACOUSTICAL TILE

1. The standard size acoustical tile is:

   a. 16 x 32 in.
   b. 12 x 12 in.
   c. 24 x 24 in.
   d. 12 x 24 in.

2. When nailing furring strips to ceiling joists, the carpenter should use:

   a. 10D nails.
   b. 8D nails.
   c. wood screws.
   d. 12D nails.

3. Acoustical tile is attached to:

   a. cripple rafters.
   b. ceiling joists.
   c. trusses.
   d. furring strips.

4. If two layers of furring strips are required, the second layer should be positioned:

   a. parallel with the first layer.
   b. perpendicularly to the first layer.
   c. directly underneath and parallel with the first layer.
   d. diagonally to the first layer.

5. After the first furring strip has been positioned, placement of the next strip will be determined by the:

   a. design established.
   b. width of the border tile.
   c. on center spacing.
   d. space available.

6. Standard acoustical tile has a wide stapling or nailing flange on:

   a. 4 edges.
   b. 1 edge.
   c. 3 edges.
   d. 2 edges.

7. Furring strips for ceiling tile installation should be attached to:

   a. header studs.
   b. purlins.
   c. bearing partitions.
   d. ceiling joists.

8. Since it is essential that the lower face of the furring strips be level with each other, this alignment should be checked with:

   a. a steel rule.
   b. the human eye.
   c. a carpenter's level.
   d. a suitable length of 2 x 4.

9. How many layers of furring strips are needed if pipes or electrical conduit are to be located below the ceiling joists?

   a. three
   b. one
   c. four
   d. two

10. Fasteners for acoustical tile should be:

    a. countersunk
    b. visible.
    c. flush.
    d. hidden.

LAP TEST ANSWER KEY: ACOUSTICAL TILE

1. d
2. b
3. d
4. b
5. b
6. d
7. d
8. c
9. d
10. d

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

File Code: 70.02.04.04.A2-0

Date Published: 10/9/75

Learning Activity Package

Student: ____________

Date: ____________

PERFORMANCE ACTIVITY: Wall Paneling

OBJECTIVE:

Install wall paneling according to specifications and following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer (13 oz.)
Compass
Glue gun
Power hand saw (6½" blade)
Saber saw
Spirit level
Straight edge
Tape measure (12 ft.)

PROCEDURE:

1. Read papges 320-322 in Modern Carpentry or page 17, Unit VI in Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Determine starting point for panel installation.
5. Scribe and cut to width (if necessary) so that the inside edge lies on center of a stud.
6. Trim for length (if necessary).

Principal Author(s):

R. Arneson

7. Cut out for any openings.
8. Install using adhesive and any necessary nails.

   NOTE: Be certain that the inside edge is plumb on center of stud.
9. Continue with steps 6 through 8 until the wall section is completed.
10. Have the installation evaluated.
11. Clean up the area and put tools and materials away.
12. Take the LAP test.

Check List: Wall Paneling

_______ Fastened properly.

_______ Neat.

_______ Square.

_______ Measurements are accurate to ± 1/8 inch.

_______ Procedures are accepted in the industry.

_______ Meets specifications.

Student: ______________________ File Code: 70 02 04 04 A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: WALL PANELING

1. How much clearance is required at the top and bottom of wall panels in order to place the moulding?

   a. 1/2" at the top and 1/4" at the bottom
   b. 1/4" at the top and 1/2" at the bottom
   c. 1/2" at both the top and bottom
   d. 1/4" at both the top and bottom

2. Softwood wall paneling is dressed to which of the following thicknesses?

   a. 1/2"
   b. 5/8"
   c. 3/4"
   d. 1/4"

3. When installing hardboard paneling, it is best to:

   a. drill the nail holes.
   b. toenail the panels.
   c. double nail the panels.
   d. use heavy finish nails.

4. Narrow widths of tongue and groove paneling should be secured by:

   a. toenailing.
   b. blind nailing.
   c. flush nailing.
   d. molly screws.

5. When nailing 1 x 2" furring strips for paneling or wall studs, they should be spaced:

   a. 18" O.C.
   b. 14" O.C.
   c. 16" O.C.
   d. 12" O.C.

6. When 1 x 2" furring strips for paneling are nailed horizontally to wall studs, the craftsman should begin at the:

   a. ceiling edge and continue downward.
   b. the middle of the wall and continue downward, and then do upper ones.
   c. floor line and continue up the wall.
   d. the middle and then alternate placement above and below.

7. What thickness of plywood can be attached directly to wall studs with nails special adhesives?

   a. 3/8"
   b. 3/4"
   c. 1/4"
   d. 1/2"

8. To secure narrow widths of tongue and groove paneling, the craftsman should use a(n):

   a. 8D finish nail and drive at 35 degree angle into base of tongue on point.
   b. 6D finish nail and drive at 45 degree angle into base of tongue on point.
   c. 8D finish nail and drive at 45 degree angle into base of tongue on point.
   d. 6D finish nail and drive at 30 degree angle into base of tongue on point.

9. When studs are poorly aligned or when plywood paneling is installed over an existing surface that is in poor condition, it is usually advisable to use:

   a. additional wall studs.
   b. a thicker adhesive.
   c. furring.
   d. shims.

10. Softwood wall paneling ranges in width from:

   a. 10" to 16".
   b. 12" to 16".
   c. 8" to 12".
   d. 4" to 12".

LAP TEST ANSWER KEY: WALL PANELING

1. d
2. c
3. a
4. b
5. c
6. c
7. a
8. b
9. c
10. d

File Code: 70.02.04.05.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student:

Date:

PERFORMANCE ACTIVITY: Tile or Linoleum

OBJECTIVE:

Install tile or linoleum according to specifications following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Modern Carpentry, Wagner.
Manufacturer's Directions

Chalk line
Mastic spreader
Platform cutter
Tape measure (12 ft.)
Utility knife

PROCEDURE:

1. Read pages 341-345 in Modern Carpentry and read manufacturer's directions.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job following manufacturer's directions.
5. Have the installation evaluated.
6. Clean up the area and put tools and materials away.
7. Take the LAP test.

Principal Author(s): R. Arneson

Check List: Tile or Linoleum

________ Fastened properly.

________ Neat.

________ Square.

________ Measurements are accurate to ± 1/8 inch.

________ Procedures are accepted in the industry.

________ Meets specifications.

Student: ____________________ File Code: 70.02.04.05.A2-2

Date: ____________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: TILE OR LINOLEUM

1. How should 6' strips of inlaid linoleum be installed?

   b. butted
   b. overlapped on the edges and then cut through both pieces
   c. spaced 1/32" apart
   d. overlapped

2. Which of the following describes the proper method for installing linoleum?

   a. Glueing it in thirds.
   b. Glueing it all at one time.
   c. Glueing it in fourths.
   d. Glueing it in halves.

3. What type of material should be used to cover underlayment when linoleum is to be installed?

   a. particle board
   b. sheetrock
   c. felt
   d. tar paper

4. At which point in a room should the mechanic begin laying tile?

   a. center
   b. lower left corner
   c. upper left corner
   d. lower right corner

5. How should floor tiles be positioned in relation to one another?

   a. Butted squarely with the corners in line.
   b. Overlapped with the centers matching the corners.
   c. Overlapped with the corners in line.
   d. Butted with the centers matching the corners.

6. To lay out the second centerline, the mechanic should use:

   a. a carpenter's folding rule held at 120 degrees to the main baseline.
   b. a steel rule held at 180 degrees to the main baseline.
   c. a carpenter's square held at 90 degrees to the main baseline.
   d. any straight edge held at 45 degrees to the main baseline.

7. Tile and/or linoleum adhesive should be allowed to set until it:

   a. begins to stick to your fingers.
   b. begins to feel tacky, but not stick to your fingers.
   c. can be easily moved about.
   d. hardens.

8. After a floor has been covered with tile, which of the following should be installed?

   a. panel molding
   b. cove base
   c. apron
   d. stool

9. To determine the main centerline for a floor tile installation, the mechanic should use a:

   a. straight edge.
   b. yard stick.
   c. chalk line.
   d. T-square.

10. Which of the following describes proper linoleum installation?

   a. Cutting out a pattern, then cutting and installing the linoleum.
   b. Installing the linoleum and then cutting off the excess.
   c. Cutting and installing the linoleum.
   d. Installing the linoleum.

LAP TEST ANSWER KEY: TILE OR LINOLEUM

1. b
2. d
3. c
4. a
5. a
6. c
7. b
8. b
9. c
10. d

File Code: 70.02.04.06.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________

Date: ____________

PERFORMANCE ACTIVITY: Base

OBJECTIVE:

Install base according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Parts of a Stair" LAP test and is taken after completing that LAP.

RESOURCES:

Modern Carpentry, Wagner.

Coping saw
Claw hammer (13 oz.)
Mitering saw
Nail set
Tape measure (12 ft.)

PROCEDURE:

1. Read pages 378-382 in Modern Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job as described in Modern Carpentry.
5. Have the installation evaluated.
6. Clean up the area and put tools and supplies away.
7. Go to the next LAP.

Principal Author(s): R. Arneson

70.02.04.06.A2-0

Check List: Install Base

________ Fastened properly.

________ Neat.

________ Square.

________ Measurements are accurate to ± 1/8 inch.

________ Procedures are accepted in the industry.

________ Meets specifications.

File Code: 70.02.04.07.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ______________________

Date: ______________________

PERFORMANCE ACTIVITY: Cove Moldings

OBJECTIVE:

Install cove molding according to specifications and following procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Parts of a Stair" LAP test and is taken after completing that LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer (13 oz.)
Coping saw
Mitering saw
Nail set
Tape measure (12 ft.)

PROCEDURE:

1. Read pages 378-382 in Modern Carpentry and pages 16-17 and 45, Unit VI in Carpentry.
2. Obtain specifications.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job following the procedure in either of the above resources.
5. Have the installation evaluated.
6. Clean up the area and put tools and materials away.
7. Go to the next LAP.

Principal Author(s):

R. Arneson

Check List: Cove Molding

________ Fastened properly.

________ Neat.

________ Square.

________ Measurements are accurate to ± 1/8 inch

________ Procedures are accepted in the industry.

________ Meets specifications.

File Code: 70.02.04.08.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________

Date: ____________

PERFORMANCE ACTIVITY: Panel Moldings

OBJECTIVE:

Intall panel moldings according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE.

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Parts of a Stair" LAP test and is taken after completing that LAP.

RESOURCES:

Cabinetmaking, Feirer.
Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer (13 oz.)
Combination square
Coping saw
Mitering saw
Nail set
Tape measure (12 ft.)

PROCEDURE:

1. Obtain the job specifications.

2. Read about panel molding installation procedures in one or more of the following resources:

   Cabinetmaking, pages 145-147
   Carpentry, pages 16 and 17, Unit VI
   Modern Carpentry, pages 378-382

3. Obtain the tools and materials needed to complete this job.

Principal Author(s): R. Arneson

4. Complete the job.
5. Have the job evaluated.
6. Clean up the area and put tools away.
7. Go to the next LAP.

Check List: Panel Moldings

_______ Fastened properly.

_______ Neat.

_______ Square.

_______ Measurements are accurate to ± 1/8 inch.

_______ Procedures are accepted in the industry.

_______ Meets specifications.

File Code: 70.02.04.09.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ______________

Date: ______________

PERFORMANCE ACTIVITY: Parts of a Stair

OBJECTIVE:

Name the parts of a stair and state their function.

Identify standards for stair construction.

EVALUATION PROCEDURE:

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

PROCEDURE:

1. Obtain specifications for stairs.
2. Read about stair parts, functions and construction standards in Carpentry, page 1, Unit VII and/or Modern Carpentry, pages 347-360.
3. Take the LAP test.

Principal Author(s): R. Arneson

Student: ____________________ File Code: 70.02.04.06 - .09.A2-2

Date: ____________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: BASE/COVE MOLDINGS/PANEL MOLDINGS/ PARTS OF A STAIR

70.02.04.06

1. The interior trim member used to seal the joint between the baseboard and the finished floor is the:

   a. cove mold.
   b. base shoe.
   c. baseboard.
   d. apron.

2. Which of the following joints should be used when a straight run of baseboard is joined?

   a. mitered-lap joint
   b. butt joint
   c. ship-lap joint
   d. tongue and groove joint

3. Baseboard joints at external corners should be:

   a. tongue and grooved.
   b. coped.
   c. ship-lapped.
   d. mitered.

4. When is the base shoe usually installed?

   a. Before the baseboard is installed.
   b. Before the baseboard corners are mitered.
   c. At the time the baseboard is installed.
   d. After the baseboard is installed.

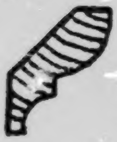
70.02.04.07

5. Moulding with a concave profile used primarily where two members meet at a right angle is called:

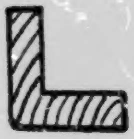
   a. cove molding.
   b. quarter-round moulding.
   c. ogee moulding.
   d. corner moulding.

70.02.04.08

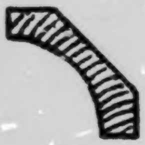
6. Which of the following molding shapes depicts a crown molding?



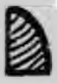
A



B



C



D

70.02.04.09

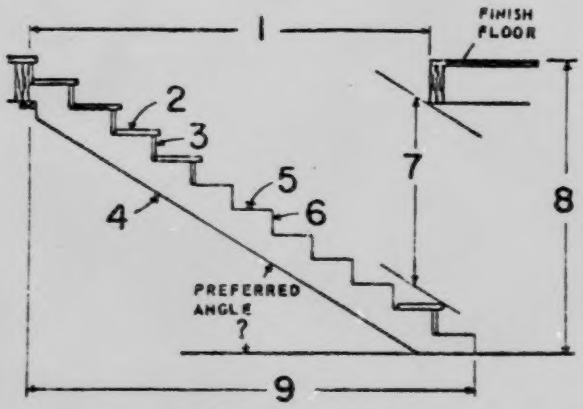
7. From the standpoint of design, the three types of stairs are:

   a. winding, main, and straight run.
   b. straight run, winding, and platform.
   c. service, platform, and straight run.
   d. winding, service, and main.

8. What stair design includes landings where the direction of the stair runs is usually changed?

   a. winding
   b. straight run
   c. main
   d. platform

The following two (2) questions refer to this illustration.



70.02.04.09 (continued)

9. Which of the following is the preferred angle for a stair?

   a 38 - 48 degrees
   b. 25 - 28 degrees
   c. 30 - 35 degrees
   d. 35 - 40 degrees

10. Item 4 is properly known as the:

   a. stairwell rough opening.
   b. stringer.
   c. tread board.
   d. total rise.

LAP TEST ANSWER KEY: BASE/COVE MOLDINGS/PANEL MOLDINGS/ PARTS OF A STAIR

LAP 06

1. b
2. a
3. d
4. c

LAP 07

5. a

LAP 08

6. a

LAP 09

7. b
8. d
9. c
10. b

File Code: 70.02.04.10.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Cutting a Stair Jack

OBJECTIVE:

Cut a stair jack according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Stair jack meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Closet Shelf and Rod" LAP test and is taken after completing that LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer
Combination square
Framing square
Power hand saw (6½" blade)
Tape measure (16 ft.)

PROCEDURE:

1. Obtain stair specifications.
2. Read about procedures for cutting a stair jack on pages 3-7, Unit VII in Carpentry and pages 347-355 in Modern Carpentry.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the stair jack evaluated.
6. Clean up the area and put tools away.
7. Go to the next LAP.

Principal Author(s):

R. Arneson

CHECKLIST: Stair Jack

_______________ Neat

_______________ Measurements are accurate to ± 1/8 inch.

_______________ Procedures are accepted in the industry.

_______________ Meets specifications.

File Code: 70.02.04.11.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student:

Date:

PERFORMANCE ACTIVITY: Treads and Risers

OBJECTIVE:

Prepare and install treads and risers according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Stair meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Closet Shelf and Rod" LAP test and is taken after completing that LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer
Combination square
Power hand saw (6½" blade)
Tape measure (16 ft.)

PROCEDURE:

1. Obtain stair specifications.
2. Read about preparing and installing treads and risers in Carpentry, pages 22-23 and 26-27, Unit VII and/or in Modern Carpentry, pages 347-356.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the stair evaluated.
6. Clean up the area and put tools away.
7. Go to the next LAP.

Principal Author(s):

R. Arneson

Check List: Treads and Riser

________ Fastened properly.

________ Neat.

________ Square.

________ Measurements are accurate to ± 1/8 inch.

________ Procedures are accepted in the industry.

________ Meets specifications.

File Code: 70.02.04.12.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Stairway Handrail

OBJECTIVE:

Prepare and install a handrail according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Closet Shelf and Rod" LAP test and is taken after completing that LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Hand saw (10 point)
Inclinometer
Power drill and drill bits
Screwdriver
Spirit level
Tape measure (12 ft.)

PROCEDURE:

1. Obtain handrail specifications.
2. Read about procedures for preparing and installing a stairway handrail in Carpentry, pages 30-35, Unit VII and/or in Modern Carpentry, page 358.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the handrail installation evaluated.
6. Clean up the area and put tools away.
7. Go to the next LAP.

Principal Author(s): R. Arneson

70.02.04.12.A2-0

CHECKLIST: Handrail

__________ Fastened properly.

__________ Neat.

__________ Measurements are accurate to ± 1/8 inch.

__________ Procedures are accepted in the industry.

__________ Meets specifications.

File Code: 70.02.04.13.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________

Date: ____________

PERFORMANCE ACTIVITY: Closet Shelf and Rod

OBJECTIVE:

Install a closet shelf and rod according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Modern Carpentry, Wagner.

Power hand drill & bits
Screwdriver
Spirit level
Stud finder

PROCEDURE:

1. Obtain specifications for closet shelf and rod.
2. Read pages 361-382 in Modern Carpentry.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

CHECK LIST: CLOSET SHELF AND ROD

____________ Fastened properly.

____________ Neat.

____________ Measurements are accurate to ± 1/8".

____________ Procedures are accepted in the industry.

____________ Meets specifications listed.

Student: ______________________ File Code: 70.02.04.10 - 13.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: CUTTING A STAIR JACK/TREADS AND RISERS/ STAIRWAY HANDRAIL/CLOSET SHELF AND ROD

70.02.04.10

1. If a stair is physically tiring and causes extra strain on the leg muscles, the problem is:

   a. insufficient headroom.
   b. an incorrect rise-run combination.
   c. too many stairs.
   d. an insufficient number of platforms of landings.

2. The width of a main stair should be:

   a. the sum of 1 riser and 1 tread or 17-18".
   b. a minimum of 10 feet.
   c. the sum of 2 risers and 1 tread or 25".
   d. wide enough for two people to pass without contact.

3. The most vital factor in stair design is the:

   a. weight of the materials to be used.
   b. relationship between the rise and run.
   c. style designated by the architectural plan.
   d. height of the unit to be constructed.

70.02.04.11

4. Given a rise of 90", determine the rise height.

   a. 6 1/2"
   b. 7 1/16"
   c. 7 1/8"
   d. 6 15/16"

5. Given a rise of 90"8, determine the minimum run.

   a. 140"
   b. 151"
   c. 137"
   d. 143"

70.02.04.11 (continued)

6. A riser should not be less than:

   a. 6" nor greater than 7".
   b. 7" nor greater than 8".
   c. 5" nor greater than 6".
   d. 8" nor greater than 9".

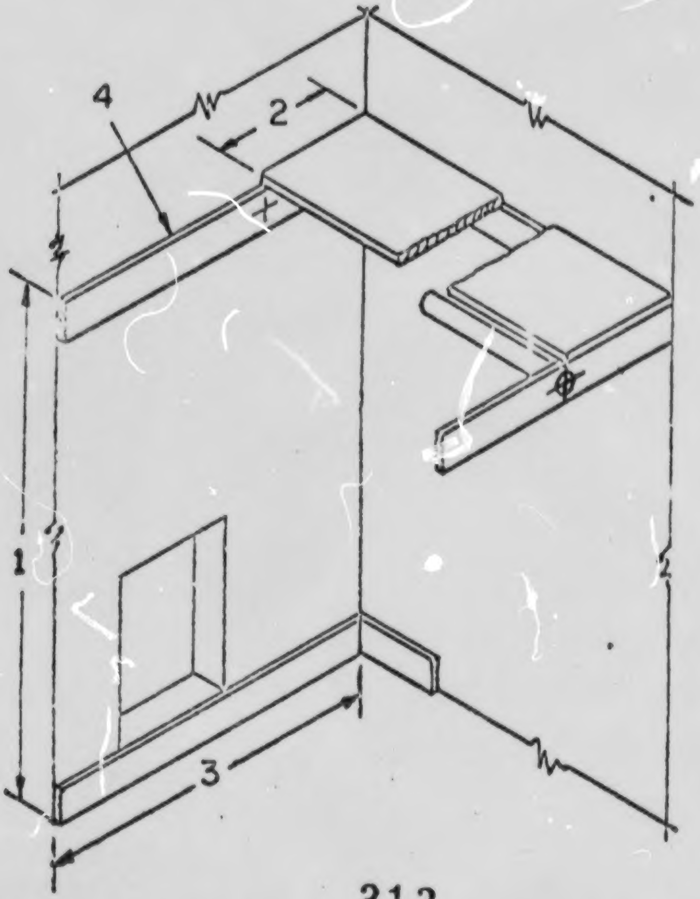
70.02.04.12

A handrail assembly of newels, balusters and rail is called the:

   a. closed stringer.
   b. open stringer.
   c. turnout.
   d. balustrade.

70.02.04.13

The following three (3) questions refer to the illustration provided below.



70.02.04.13 (continued)

8. Identify item 4.

   a. furring strip
   b. apron
   c. hook strip
   d. base shoe

9. For a closet, dimension 3 should be at least:

   a. 5'.
   b. 2'.
   c. 4'.
   d. 3'.

10. Which of the following should be installed first when constructing a closet shelf and rod assembly?

   a. the clothes pole
   b. all the hook strips
   c. the shelf
   d. one hook strip

LAP TEST ANSWER KEY: CUTTING A STAIR JACK/TREADS AND RISERS/ STAIRWAY HANDRAIL/CLOSET SHELF AND ROD

LAP 10

1. b
2. d
3. b

LAP 11

4. d
5. d
6. b

LAP 12

7. d

LAP 13

8. c
9. b
10. d

File Code: 70.02.04.14.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Insulation

OBJECTIVE:

Install insulation according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria listed on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Modern Carpentry, Wagner.

Straight edge
T-5 Stapler
Utility knife

PROCEDURE:

1. Obtain specifications.
2. Read pages 277-306 in Modern Carpentry.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

CHECK LIST: INSULATION

__________ Fastened properly.

__________ Procedures are accepted in the industry.

__________ Meets specifications.

Student: ______________________ File Code: 70.02.04.14.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: INSULATION

1. Which term applies to the transfer of heat by another agent such as air as illustrated by figure 2?

   a. convection
   b. radiation
   c. conduction
   d. condensation

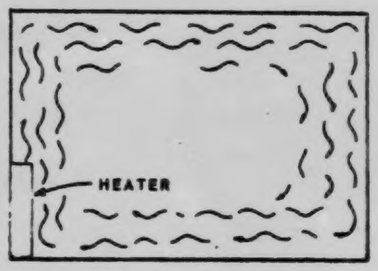


Fig. 2

2. Refer to figure 1 below. The transmission of heat from one molecule to another within a given material or from one material to another when they are held in direct contact is called:

   a. radiation.
   b. convection.
   c. condensation.
   d. conduction.

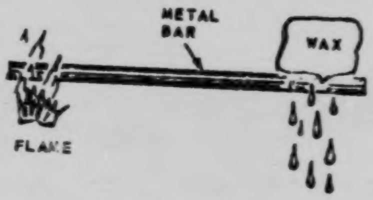


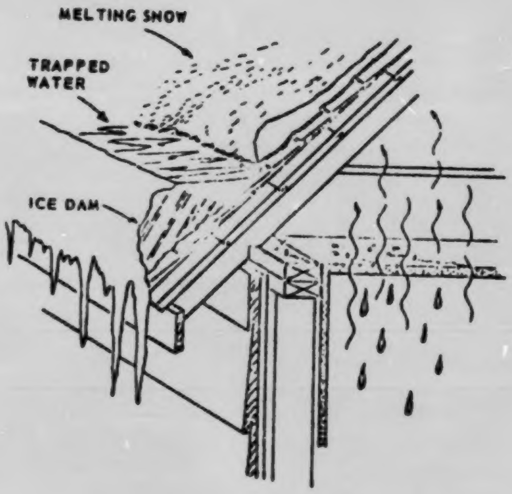
Fig. 1

3. Which of the following types of insulation is generally furnished in rolls or strips of convenient length and in various widths suited to standard stud and joist spacing?

   a. rigid
   b. blanket
   c. loose fill
   d. reflective

4. The illustration provided below depicts which of the following symptoms?

   a. Lack of insulation in walls.
   b. Lack of insulation in ceiling.
   c. Too much insulation in roof.
   d. Too much insulation in ceiling.



5. Air leakage around openings and cracks is more commonly known as:

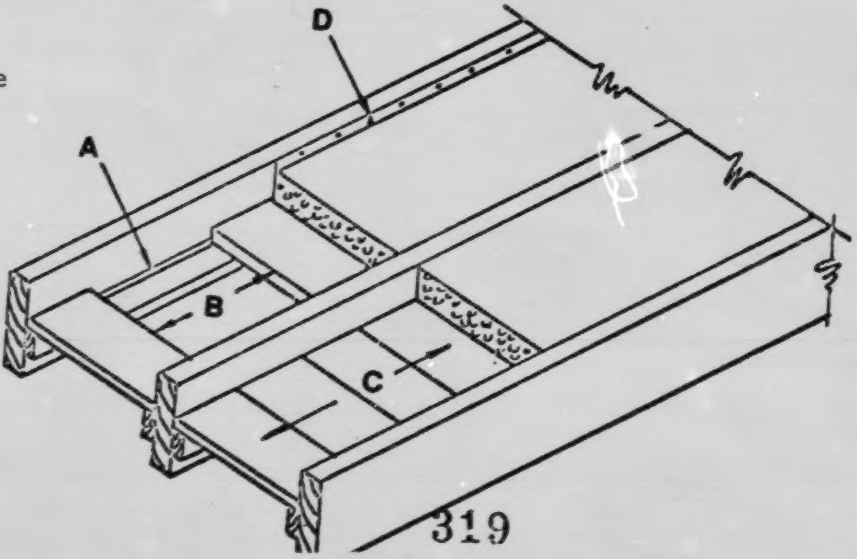
   a. infiltration.
   b. radiation.
   c. condensation.
   d. convection.

6. Reflective insulation differs from all other insulating materials in that:

   a. the number of reflecting surfaces, not thickness of material, determines value.
   b. it does not require any backing material for support.
   c. it does not need to be exposed to an air space.
   d. it comes in 2 x 4" squares.

7. Refer to the illustration below. Which type of insulation would require support as depicted by the letter "C"?

   a. loose fill
   b. reflective
   c. blanket
   d. rigid



8. When installing batt insulation in walls, the craftsman should butt the two pieces of insulation together and:

   a. butt the vapor barrier together.
   b. ship-lap the vapor barrier.
   c. overlap the vapor barrier by at least six inches.
   d. overlap the vapor barrier by at least one inch.

9. The transfer of heat by wave motion as shown in figure 3 is called:

   a. convection.
   b. conduction.
   c. condensation.
   d. radiation.

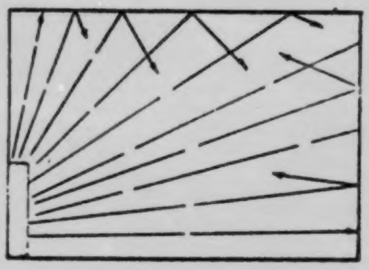


Fig. 3

10. Heated areas, especially in cold climates, should be surrounded with insulation by placing it in the:

   a. walls only.
   b. floors and walls only.
   c. walls, ceiling and floors.
   d. walls and ceiling only.

LAP TEST ANSWER KEY: INSULATION

1. a
2. d
3. b
4. b
5. a
6. a
7. a
8. d
9. d
10. c

File Code: 70.02.04.15.A2-0

Date Published: 10/9/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student:

Date:

PERFORMANCE ACTIVITY: Plastic Laminate

OBJECTIVES:

Install plastic laminate according to specifications and follow procedures accepted in the industry.

Identify characteristics of plastic laminate.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP

RESOURCES:

Modern Carpentry, Wagner.

Fine tooth mill bastard
Laminate Rollers
Laminate trimmer and bits
Radial saw
Screwdriver
Table saw

PROCEDURE:

1. Obtain specifications.
2. Read pages 396-399 in Modern Carpentry.
3. Obtain the tools, supplies and materials needed to complete this job.
4. Complete the job.
5. Have installation evaluated.
6. Clean up the area and put tools and supplies away.
7. Take the LAP test.

Principal Author(s): R. Arneson

CHECK LIST: PLASTIC LAMINATE

_________ Fastened properly.

_________ Neat.

_________ Measurements are accurate to ± 1/64 inch.

_________ Procedures are accepted in the industry.

_________ Meets specifications.

Student: ______________________ File Code: 70.02.04.15.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: PLASTIC LAMINATE

1. The thickness of standard grade plastic laminate is:

   a. 1/4".
   b. 1/16"
   c. 3/8".
   d. 1/32".

2. To make corners of plastic laminate smooth, they should be:

   a. coped.
   b. beveled.
   c. overlapped.
   d. squared.

3. Which of the following tools should be used to trim and/or smooth the edges of plastic laminate?

   a. portable router
   b. circular saw
   c. portable sander
   d. sabre saw

4. Plastic laminate must have its decorative side down when it is cut with a:

   a. portable router.
   b. metal hacksaw.
   c. cutoff saw.
   d. crosscut hand saw.

5. Which of the following adhesives should be used for on-the-job laminate applications?

   a. resin glue
   b. contact cement
   c. casein glue
   d. polyvinyl cement

6. Of all the types of edge treatments for plastic laminates used today, the most popular is:

   a. extruded metal edge.
   b. edge banding.
   c. postformed edge.
   d. shaped and dropped wood edge.

7. Which of the following symptoms indicates that contact cement has been applied too thinly?

   a. shiny spots
   b. lumps
   c. glossy areas
   d. dull spots

8. Plastic laminate consists of:

   a. glued craft paper put in a high pressure press.
   b. craft paper.
   c. glued craft paper.
   d. craft paper and graphite particles.

9. Postforming grade of plastic laminate is approximately:

   a. 1/4" thick.
   b. 1/16" thick.
   c. 3/8" thick.
   d. 1/20" thick.

10. When a metal edge with T-molding is to be applied to plastic laminate, which of the following must be first accomplished?

    a. The molding is held in place with masking tape.
    b Heat is applied to the metal edge.
    c. Contact cement is applied.
    d. A slot is cut in the edge of the core.

LAP TEST ANSWER KEY: PLASTIC LAMINATE

1. b
2. b
3. a
4. c
5. b
6. b
7. d
8. a
9. d
10. d

Student: ______________________ File Code: 70.02.04.00.B2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

UNIT POST TEST: INTERIOR COVERINGS

70.02.04.01

1. Which method of securing sheetrock to wall framing should be used in order to produce a sturdy wall that is somewhat resistant to impact sounds?

   a. double nailing
   b. wallboard screws
   c. adhesive
   d. ring nails

2. Which of the following ring nails is recommended for securing sheetrock to wall framing?

   a. 1/8" head and 2" long
   b. 1/2" head and 1 1/2" long
   c. 1/2" head and 2" long
   d. 1/4" head and 1 1/4" long

3. Why has the use of dry wall materials, such as sheetrock, steadily increased in modern construction?

   a. It is not easily available.
   b. It is a great timesaving factor.
   c. It has less drying time.
   d. It increases construction cost.

4. To assure exact measurements when using sheetrock, the carpenter should:

   a. make 2 readings on the same side of the panel.
   b. make a good reading on one side of the panel.
   c. make 2 readings, one on each side of the panel.
   d. make 2 readings on one side, then 2 more on the other side.

70.02.04.02

5. Exterior corners of sheetrock are reinforced with:

   a. reinforcing tape.
   b. molly screws.
   c. double nailing.
   d. metal corner beads.

70.02.04.03

6. Fasteners for acoustical tile should be:

   a. visible.
   b. countersunk.
   c. hidden.
   d. flush.

7. Furring strips for ceiling tile installation should be attached to:

   a. header studs.
   b. bearing partitions.
   c. ceiling joists.
   d. purlins.

8. How many layers of furring strips are needed if pipes or electrical conduit are to be located below the ceiling joists?

   a. four
   b. one
   c. three
   d. two

9. Standard acoustical tile has a wide stapling or nailing flange on:

   a. 1 edge.
   b. 4 edges.
   c. 2 edges.
   d. 3 edges.

10. If two layers of furring strips are required, the second layer should be positioned:

    a. perpendicularly to the first layer.
    b. parallel with the first layer.
    c. directly underneath and parallel with the first layer.
    d. diagonally to the first layer.

70.02.04.04

11. Softwood wall paneling ranges in width from:

    a. 10" to 16".
    b. 4" to 12".
    c. 12" to 16".
    d. 8" to 12".

70.02.04.04

12. When installing hardboard paneling, it is best to:

    a. drill the nail holes.
    b. use heavy finish nails.
    c. double nail the panels.
    d. toe-nail the panels.

13. Softwood wall paneling is dressed to which of the following thicknesses?

    a. 5/8"
    b. 1/2"
    c. 1/4"
    d. 3/4"

14. Narrow widths of tongue and groove paneling should be secured by:

    a. flush nailing.
    b. blind nailing.
    c. toe-nailing.
    d. molly screws.

15. When 1 x 2" furring strips for paneling are nailed horizontally to wall studs, the craftsman should begin at the:

    a. middle of the wall and continue downward, and then do upper ones.
    b. ceiling edge and continue downward.
    c. floor line and continue up the wall.
    d. the middle and then alternate placement above and below.

70.02.04.05

16. How should 6' strips of inlaid linoleum be installed?

    a. Overlapped on the edges and then cut through both pieces.
    b. Butted.
    c. Overlapped.
    d. Spaced 1/32" apart.

17. After a floor has been covered with tile, which of the following should then be installed?

    a. stool
    b. panel molding
    c. cove base
    d. apron

70.02.04.05 (continued)

18. At which point in a room should the mechanic begin laying tile?

    a. lower right corner
    b. lower left corner
    c. upper left corner
    d. center

19. Which of the following describes proper linoleum installation?

    a. Cutting and installing the linoleum.
    b. Installing the linoleum and then cutting off the excess.
    c. Installing the linoleum.
    d. Cutting out a pattern, then cutting and installing the linoleum.

20. What type of material should be used to cover underlayment when linoleum is to be installed?

    a. particle board
    b. tar paper
    c. felt
    d. sheetrock

70.02.04.06

21. Baseboard joints at external corners should be:

    a. ship-lapped.
    b. coped.
    c. mitered.
    d. tongue and grooved.

22. Which of the following joints should be used when a straight run of baseboard is joined?

    a. ship-lap joint
    b. tongue and groove joint
    c. mitered-lap joint
    d. butt joint

23. The interior trim member used to seal the joint between the baseboard and the finished floor is the:

    a. base shoe.
    b. cove mold.
    c. baseboard.
    d. apron.

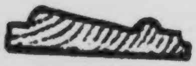
70.02.04.07

24. Moulding with a concave profile used primarily where two members meet at a right angle is called:

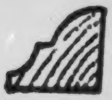
    a. quarter-round moulding.
    b. cove molding.
    c. corner moulding.
    d. ogee moulding.

70.02.04.08

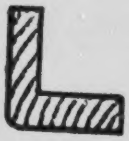
25. Which of the following molding shapes depicts a panel molding?



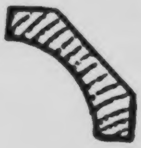
A



B



C



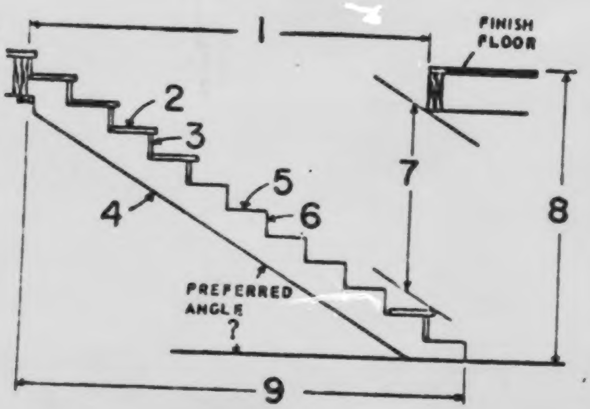
D

70.02.04.09

26. The circular or elliptical stair design which gradually changes direction as it ascends from one level to another is called:

    a. main.
    b. platform.
    c. straight run.
    d. winding.

The following four (4) questions refer to the illustration below.



70.02.04.09 (continued)

27. Which of the following identifies item #7?

    a. total rise
    b. headroom
    c. stairwell rough opening
    d. total run

28. Which of the following identifies item 3?

    a. unit rise
    b. unit run
    c. riser board
    d. treat board

29. Item 1 refers to which of the following?

    a. headroom
    b. stairwell rough opening
    c. total run
    d. total rise

30. Identify item 6:

    a. unit run
    b. unit rise
    c. tread board
    d. riser board

70.02.04.10

31. Which of the following should be installed when a slight extension in the floor area above a stairway is needed?

    a. An elongated ceiling joist.
    b. An auxiliary header.
    c. A different rise-run combination.
    d. A different style stringer.

32. The width of a main stair should be:

    a. the sum of 2 risers and 1 tread or 25".
    b. the sum of 1 riser and 1 tread or 17-18".
    c. wide enough for two people to pass without contact.
    d. a minimum of 10 feet.

70.02.04.10 (continued)

33. Which of the following members are installed immediately after the stair jacks are in place?

    a. newel
    b. riser
    c. handrail
    d. tread

70.02.04.11

34. A rise should not be less than:

    a. 7" nor greater than 8".
    b. 5" nor greater than 6".
    c. 6" nor greater than 7".
    d. 8" nor greater than 9".

35. A tread should be not less than:

    a. 12" nor greater than 13".
    b. 10" nor greater than 11".
    c. 11" nor greater than 12".
    d. 9" nor greater than 10".

70.02.04.12

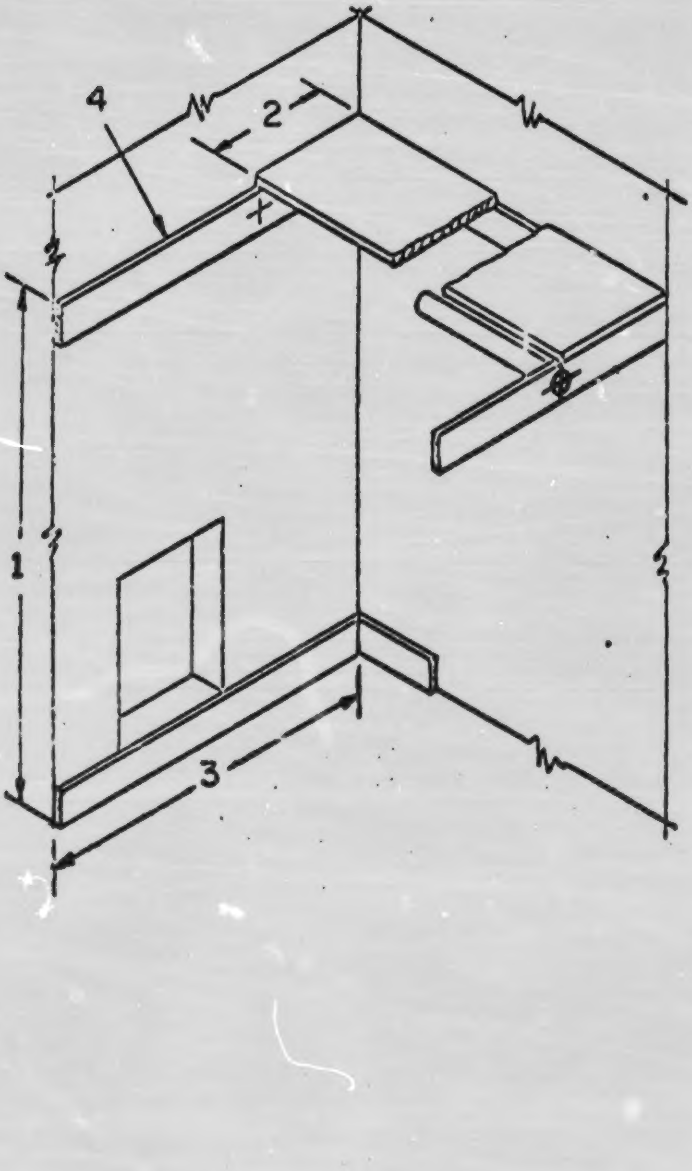
36. A handrail assembly of newels, balusters, and rail is called the:

    a. open stringer.
    b. closed stringer.
    c. turnout.
    d. balustrade.

70.02.04.13

The following four (4) questions refer to the illustration provided on the following page.

70.02.04.13 (continued)



70.02.04.13 (continued)

37. Dimension 2 should be a minimum of:

    a. 10".
    b. 12".
    c. 24".
    d. 16".

38. Identify item 4.

    a. hook strip
    b. apron
    c. furring strip
    d. base shoe

39. For a closet, dimension #3 should be at least:

    a. 4'.
    b. 3'.
    c. 2'.
    d. 5'.

40. Ordinarily, dimension #1 is:

    a. 6' 0" and higher.
    b. 4' 10" - 5' 2".
    c. 5' 7" - 6' 0".
    d. 5' 3" - 5' 7".

70.02.04.14

41. Reflective insulation differs from all other insulating materials in that:

    a. it does not need to be exposed to an air space.
    b. it comes in 2 x 4" squares.
    c. the number of reflecting surfaces not thickness of material determines value.
    d. it does not require any backing material for support.

42. When installing batt insulation in walls, the craftsman should butt the two pieces of insulation together and:

    a. overlap the vapor barrier by at least one inch.
    b. butt the vapor barrier together.
    c. ship-lap the vapor barrier.
    d. overlap the vapor barrier by at least six inches.

70.02.04.14 (continued)

43. Which term applies to the transfer of heat by another agent such as air as illustrated by figure 2?

    a. convection
    b. radiation
    c. conduction
    d. condensation

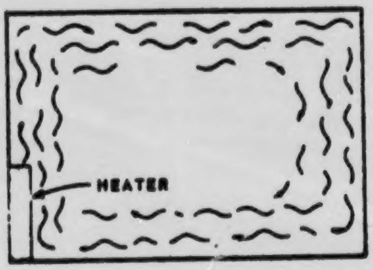


Fig. 2

44. The transfer of heat by wave motion as shown in figure 3 is called:

    a. convection.
    b. conduction.
    c. radiation.
    d. condensation.

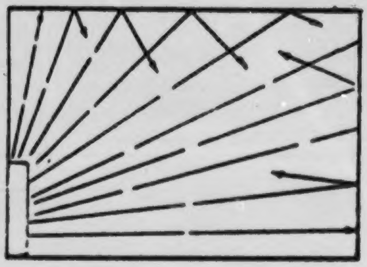
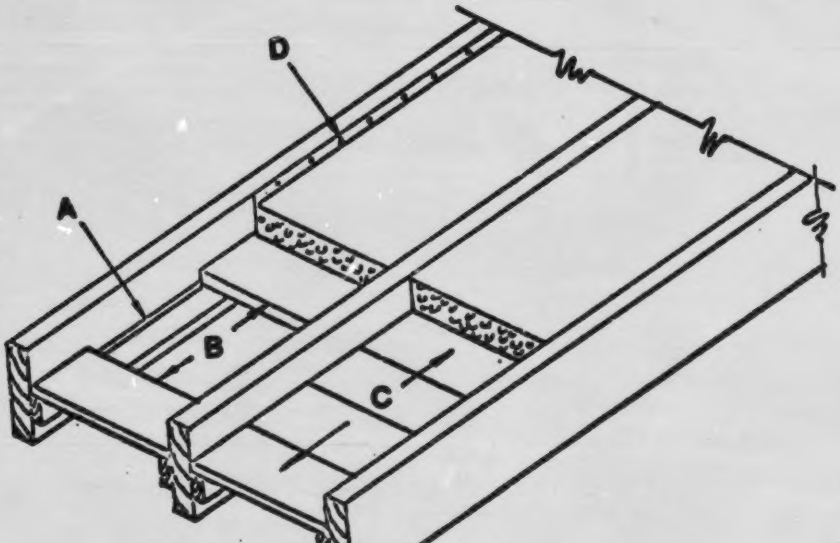


Fig. 3

45. Refer to the illustration below. Which type of insulation would require support as depicted by the letter "C"?

    a. reflective
    b. blanket
    c. loose fill
    d. rigid



70.02.04.15

46. Plastic laminate can be installed in which of the following positions?

    a. The diagonal position only.
    b. Any position.
    c. The horizontal position only.
    d. The vertical position only.

47. The thickness of standard grade plastic laminate is:

    a. 1/32".
    b. 3/8".
    c. 1/16"
    d. 1/4".

48. Postforming grade of plastic laminate is approximately:

    a. 1/16" thick.
    b. 1/20" thick.
    c. 1/4" thick.
    d. 3/8" thick.

49. Plastic laminate must have its decorative side down when it is cut with a:

    a. metal hacksaw.
    b. cutoff saw.
    c. portable router.
    d. crosscut hand saw.

50. Plastic laminate is resistant to which of the following?

    a. acid
    b. flame
    c. heat
    d. solvent

UNIT POST TEST ANSWER KEY: INTERIOR COVERINGS

LAP 01

1. c
2. d
3. b
4. c

LAP 02

5. d

LAP 03

6. c
7. c
8. d
9. c
10. a

LAP 04

11. b
12. a
13. d
14. b
15. c

LAP 05

16. a
17. c
18. d
19. c
20. c

LAP 06

21. c
22. c
23. a

LAP 07

24. b

LAP 08

25. a

LAP 09

26. d
27. b
28. c
29. b
30. b

LAP 10

31. b
32. c
33. b

LAP 11

34. a
35. c

LAP 12

36. d

LAP 13

37. b
38. a
39. c
40. d

LAP 14

41. c
42. a
43. a
44. c
45. c

LAP 15

46. b
47. c
48. b
49. b
50. c

Student: ______________________ **File Code:** 70.02.04.00.A1-5

Date: ______________________ **Date Published:** 11-13-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Family Pay Number: __________ Sex: M F (Circle 1)

UNIT PERFORMANCE TEST: INTERIOR COVERINGS

OBJECTIVE:

Given specifications the student will be able to layout and construct a stair.

TASK:

Construct a set of stairs from specifications provided by your instructor. Include treads, risers and hand rail.

ASSIGNMENT:

RESOURCES:

(See attached sheet)

RESOURCES:

Claw hammer
Tape measure
Framing square
Level
Combination square
Hand saw
Brace and bit set
Power hand saw
Power plane
Circular saw
Radial saw
Router
Assortment of fastners and lumber

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Student: ______________________ **File Code:** 70.02.04.00.A1-5

Date: ______________________ **Date Published:** 11-13-74

Family Pay Number: ____________ Sex: M F (Circle 1)

PERFORMANCE CHECKLIST:

OVERALL PERFORMANCE: Satisfactory_____ Unsatisfactory_____

	CRITERION	
	Met	Not Met
Objective 1:		
1. Meets blueprint specifications.		
Criterion: All measurements meet specifications.		
2. Uses proper materials.		
Criterion: Materials used meet specifications per		
blueprint or materials list and FHA standards.		
3. Uses tools and equipment safely.		
Criterion: No injury to student or damage to equipment		
occurs.		
4. Stair is properly assembled.		
Criterion: Meets professional standards and specifications.		
5. Student completes job in a reasonable length of time.		
Criterion: Meets assigned time.		
To obtain an overall score of satisfactory, student must meet		
criterion on 4/5 line items.		

File Code: 70.02.05.00.A2-1

Date Published: 10/10/75

Mountain-Plains Education &
Economic Development
Program, Inc.

Glasgow AFB, Montana 59231

Learning Experience Guide

UNIT: DOORS AND JAMBS

RATIONALE:

Hanging doors and installing related components are included in the finishing activities of carpenters. A well-fitted door is an important feature for a structure. Many kinds of doors are used in structures. This requires the craftsman to be able to develop skills for performing quality installations for a variety of door applications. The knowledge to apply effective procedures and the practice in making quality doors installations are designed into this Unit.

PREREQUISITES:

The prerequisites listed in the Finish Course LEG apply to this Unit.

OBJECTIVES:

Given construction prints and/or specifications, tools, equipment and materials, **you** will:

Determine materials needed for a door installation.

Identify the parts of a door.

Prepare a door opening, hang the door and complete the installation as specified.

RESOURCES:

Printed Material

Blueprint Reading and Sketching, Carpentry Trades, Residential. Delmar Publishers, 1957.
Carpentry. United Brotherhood of Carpenters and Joiners of America. Carpenters Printing Plant, Washington, D.C., 1950-1970
Modern Carpentry. Willis H. Wagner, Goodheart-Willcox Company, Inc., 1973.

Audio/Visuals

none

Principal Author(s): Lyle Leland

Equipment

Bits, expansive
Bit, hole cutting
Bits, mortising
Drill, electric hand
Hammer, claw
Hammer, tack
Level, spirit
Bits, speed (set)
Bits, twist set
Jointer
Miter box
Nail set, ret of
Plane, block
Plane, power hand
Router, portable
Templates, door hinge
Sander, belt portable
Saw, hack
Saw, hand crosscut (8 & 10 point)
Saw, panel
Saw, power hand
Saw, radial arm
Screwdriver, Phillips set
Screwdriver, slot set
Shears, tinners
Square, combination
Square, T-Bevel
Tape measure (12 & 16 ft.)

GENERAL INSTRUCTIONS:

This Unit consists of eleven Learning Activity Packages (LAPs). Each LAP will provide specific information for completion of a learning activity.

The general procedure for this unit is as follows:

(1) Read the first assigned Learning Activity Package (LAP).
(2) Begin and complete the first assigned LAP.
(3) Take and score the LAP test.
(4) Turn in the LAP test answer sheet.
(5) Determine the reason for any missed items on the LAP test.
(6) Proceed to and complete the next assigned LAP in the unit.
(7) Complete all required LAPs for the unit by following steps 3 through 6.
(8) In this Unit, there are some LAPs that have tests combined with other LAP tests. These combined tests are taken after completing the last LAP covered by the test.
(9) Take the unit tests as described in the Unit LEG "Evaluation Procedures".
(10) Proceed to the next assigned unit.

PERFORMANCE ACTIVITIES:

.01 Materials for a Door Installation
.02 Door Jamb
.03 Interior Door
.04 Exterior Door
.05 Door Locks
.06 Bi-fold and By-pass Doors
.07 Sliding Doors
.08 Door Section
.09 Door Trim
.10 Weatherstrip
.11 Threshold

EVALUATION PROCEDURE:

When pretesting:

1. The student takes the unit multiple-choice pretest.
2. Successful completion is 4 out Of 5 items for each LAP part of the pretest.
3. The student then takes a unit performance test if the unit pretest was successfully completed.
4. Satisfactory completion of the performance test is meeting the criteria listed on the performance test.

When post testing:

1. The student takes a multiple-choice unit post test and a unit performance test.
2. Successful unit completion is meeting the listed criteria for the performance test.

FOLLOW-THROUGH:

When you finish reading this Unit LEG, go to the first assigned Learning Activity Package (LAP) listed on your Student Progress Record (SPR). Use knowledge and skills acquired thus far to complete the activities.

Student: ______________________ File Code: 70.02.05.00.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

UNIT PRETEST: DOORS AND JAMB

70.02.05.01

The first five (5) questions refer to the plans found in "Building Trades Blueprints for Carpenters."

1. How many sections are there in each overhead garage door?

   a. 6
   b. 8
   c. 2
   d. 4

2. How many overhead doors are to be used in this structure?

   a. 3
   b. 4
   c. 2
   d. 1

3. What size garage doors are used in the structure?

   a. 8' 0" x 7' - 0" x 1 3/4"
   b. 10' - 9" x 4' - 3 1/8"
   c. 10' - 9" x 6' - 2 1/8c
   d. 42 - 6" x 3' - 2 3/16"

4. What size door is used for the linen closet?

   a. 2 - 2' - 01/2" x 6' - 8' x 1
   b. 2 - 3' - 01/2" x 6' 0" x 1"
   c. 3' - 0" x 6' - 8" x 1 3/4
   d. 2' - 6" x 6' - 8" x 1 3/8"

5. How many different size doors are used in this structure?

   a. 10
   b. 16
   c. 14
   d. 15

70.02.05.02

6. Which of the following should be used to secure the jambs of a door frame together?

   a. 8D casing or finish nails
   b. 6D finish nails
   c. 12D casing or finish nails
   d. 10D casing or finish nails

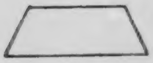
7. What size nails should be used to install an interior door jamb?

   a. 5D finish
   b. 8D finsih
   c. 3D finish
   d. 6D finish

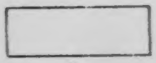
8. When using hardwood door casing, it is advisable to:

   a. drill the nail holes.
   b. use contact cement.
   c. use wood screws.
   d. use 10D finish nails.

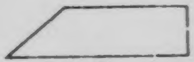
9. Which of the following shapes would best represent the side of a door jamb?



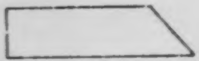
a



b



c



d

10. The part of the interior doorway which forms the lining of the opening and covers the edges of the partition is called the:

   a. head jamb.
   b. base jamb.
   c. side jamb.
   d. door jamb.

70.02.05.03

11. What size hinge butt is used on most interior doors?

    a. 2 1/4" x 2 1/4"
    b. 3 1/2" x 3 1/2"
    c. 2" x 2"
    d. 4" x 4"

12. Which of the following are the proper titles for the two basic door types?

    a. hollow core and flush
    b. panel and flush
    c. stile-and-rail and solid core
    d. panel and fiber core

13. At what height are door handles usually installed?

    a. 4'
    b. 2 1/2'
    c. 3'
    d. 3 1/2'

14. In modern construction, gains for hinges are usually cut with:

    a. a cutoff saw.
    b. an electric plane.
    c. a hand plane.
    d. an electric router.

15. In order to set the door stop on the hinge jamb for a clearance of 1/16", the door should be:

    a. in the closed position.
    b. in any position.
    c. partially open.
    d. in the fully open position.

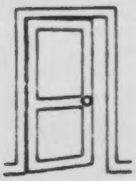
70.02.05.04

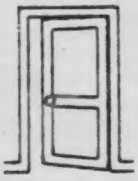
16. The most common height of exterior doors used in residential construction is:

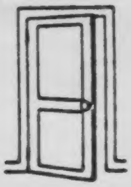
    a. 7' 0".
    b. 7' 2".
    c. 6' 6".
    d. 6' 8".

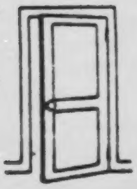
ILLUSTRATIONS FOR ITEMS 21 - 25.

DOOR SET

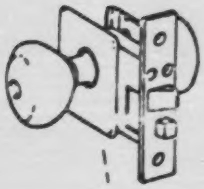

1

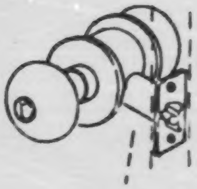

2

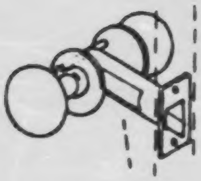

3

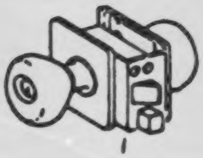

4

LOCK SET


1


2


3


4

70.02.05.04

17. To support and/or straighten the side jambs of a door, a carpenter should use which of the following?

    a. thicker side jambs
    b. support studs
    c. double-shingle wedges
    d. heavier door hinges

18. In order to set the door stop on the hinge jamb for a clearance of 1/16", the door should be:

    a. in any position.
    b. in the fully open position.
    c. in the closed position.
    d. partially open.

19. In modern construction, gains for hinges are usually cut with:

    a. a sabre saw.
    b. a hand plane.
    c. an electric router.
    d. an electric plane.

20. What must be done in order to position a standard door sill level with the finished floor?

    a. Remove a section of the rough floor.
    b. Do not install a threshold.
    c. Do not install a spreader.
    d. Remove section of rough floor and trim portion of top edge of floor.

70.02.05.05

21. Which of the following lock sets is identified by #3?

    a. cylindrical lock set
    b. unit lock set
    c. tubular lock set
    d. mortise lock set

22. Identify "hand of the door" type #1.

    a. right hand
    b. left hand
    c. right hand reverse
    d. left hand reverse

70.02.05.05 (continued)

23. Which of the following identifies "hand of the door" type #4?

    a. right hand reverse
    b. right hand
    c. left hand reverse
    d. left hand

24. Lock set #2 is commonly known as a:

    a. tubular lock set.
    b. mortise lock set.
    c. cylindrical lock set.
    d. unit lock set.

25. The center of a lock to be installed in a door should measure:

    a. 42" from the floor.
    b. 38" from the floor.
    c. 48" from the floor.
    d. 32" from the floor.

70.02.05.06

26. Four-door folding door units generally range from:

    a. 3 - 6 ft. wide.
    b. 4 - 7 ft. wide.
    c. 2 - 5 ft. wide.
    d. 1 - 4 ft. wide.

27. At what height on bifold doors are the door pulls secured?

    a. 3'
    b. 2 1/4'
    c. 4'
    d. 3 1/2'

28. Which of the following folding door units is made of fabrics and vinyl coated materials attached to a metal framework?

    a. four-door type folding door
    b. accordion-fold door
    c. "stack" type folding door
    d. two-door type folding door

70.02.05.07 (continued)

29. The major disadvantage of bypass sliding doors is:

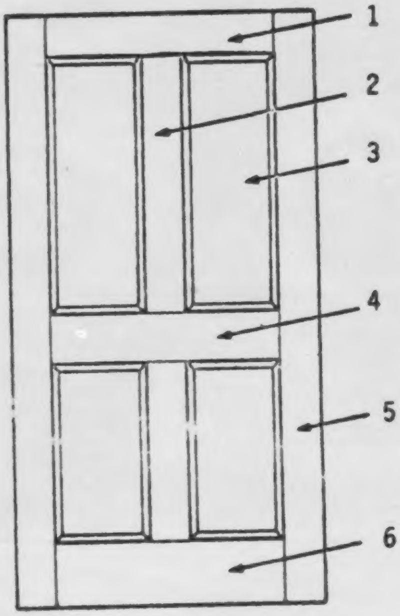
    a. their complicated hardware.
    b. the inability to gain access to the total opening at one time.
    c. their weight.
    d. their high cost.

30. At what height on a sliding door is a door pull fastened?

    a. 3 1/2'
    b. 3'
    c. 4'
    d. 2 1/4'

70.02.05.08

Refer to the illustration below for the following three (3) questions.



31. Which of the following items properly identifies item #4?

    a. mullion
    b. bottom rail
    c. lock or intermediate rail
    d. stile

70.02.05.08 (continued)

32. Identify item #5.

    a. top rail
    b. mullion
    c. stile
    d. apron

33. Identify item #3.

    a. mullion
    b. stile
    c. lock or intermediate rail
    d. panel

34. If a door jamb is to be trimmed with wood and installed in a 2 x 4" wall with sheetrock on both sides, how wide must the door jamb be?

    a. 5"
    b. 3 7/8"
    c. 4 5/8"
    d. 4"

35. Interior door jambs are usually:

    a. 3/4" thick.
    b. 7/8" thick.
    c. 1/4" thick.
    d. 1/2" thick.

70.02.05.09

36. Nails used for securing door casing should be:

    a. toenailed.
    b. countersunk.
    c. protruding.
    d. flush.

37. When nailing door casing in place, the nails should be placed:

    a. 16" O.C.
    b. 12" O.C.
    c. 14" O.C.
    d. 18" O.C.

70.02.05.09 (continued)

38. What size nails should be used for door jambs?

   a. 6D finish
   b. 8D finish
   c. 10D finish
   d. 4D finish

39. Which of the following is the most common type of door casing?

   a. cove
   b. crown
   c. teardrop
   d. quarter round

40. The corners of door casing should be:

   a. mitered.
   b. butted.
   c. spaced.
   d. overlapped.

70.02.05.10

41. The corners of weatherstrip should be:

   a. spaced.
   b. butted.
   c. mitered.
   d. overlapped.

42. To prevent excessive pressure on weatherstripping, the carpenter should use a:

   a. 1/8" spacer.
   b. 1/4" spacer.
   c. 1/32" spacer.
   d. 1/2" spacer.

70.02.05.11

43. What is the function of a threshold?

   a. Supports door molding.
   b. Takes up space left by a short door.
   c. Weatherproofs the exterior door.
   d. Weatherproofs an interior door.

70.02.05.11 (continued)

44. What regulates the thickness of a threshold?

    a. The type of floor covering used.
    b. The type of door casing required.
    c. The width of the door jamb.
    d. The style of door used.

45. A threshold is placed under which of the following door types.

    a. interior
    b. exterior
    c. sliding
    d. folding

UNIT PRETEST ANSWER KEY: DOORS AND JAMBS

LAP 01

1. d
2. c
3. a
4. a
5. c

LAP 02

6. a
7. b
8. a
9. a
10. d

LAP 03

11. b
12. b
13. c
14. d
15. a

LAP 04

16. d
17. c
18. c
19. c
20. d

LAP 05

21. c
22. a
23. c
24. c
25. b

LAP 06

26. a
27. a
28. b

LAP 07

29. b
30. b

LAP 08

31. c
32. c
33. d
34. c
35. a

LAP 09

36. b
37. a
38. d
39. c
40. a

LAP 10

41. c
42. c

LAP 11

43. c
44. a
45. b

File Code: 70.02.05.01.A2-0

Date Published: 10/10/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ______________________

Date: ______________________

PERFORMANCE ACTIVITY: Materials for a Door Installation

OBJECTIVES:

Prepare an estimate and an order for materials necessary to meet the job specifications.

Identify types of materials and their use from given prints.

EVALUATION PROCEDURE:

Materials list contains the quantity and types required to meet the criteria listed in the specifications.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Door Jamb" LAP test and is taken **after** completing that LAP.

RESOURCES:

Blueprint Reading and Sketching, Carpentry Trades, Residential, Delmar Publishers.
Modern Carpentry, Wagner.

PROCEDURE:

1. Read pages 361-382 in Modern Carpentry.

   NOTE: Use prints from Blueprint Reading and Sketching, Carpentry Trades, Residential.

2. Obtain specifications.
3. Prepare the materials order.
4. Prepare a cost estimate for the materials order.
5. Have the order and estimate evaluated.
6. Go to the next LAP.

Principal Author(s): R. Arneson

File Code: 70.02.05.02.A2-0

Date Published: 10/10/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Door Jamb

OBJECTIVE:

Intall door jamb according to specifications.

EVALUATION PROCEDURE:

Installation meets the criteria listed on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer
Combination square
Hand saw (10 point)
Panel saw or radial saw
Spirit level
Tape measure (12 ft.)

PROCEDURE:

1. Obtain specifications.
2. Read pages 10 and 11, Unit VI in Carpentry and/or pages 361-364 in Modern Carpentry.
3. Obtain the tools and materials needed to complete this job.
4. Complete the job.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

Check List: Door Jamb

_______ Fastened properly.

_______ Neat.

_______ Plumb and level.

_______ Measurements are accurate to ± 1/8 inch.

_______ Procedures are accepted in the industry.

_______ Meets specifications .

Student: ______________________ File Code: 70.02.05.01 & .02.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: MATERIALS FOR A DOOR INSTALLATION/DOOR JAMB

70.02.05.01

The first five questions refer to the plans in the Blueprint Reading and Sketching, Carpentry Trades, Residential.

1. What type of door adjoins the kitchen and dining room?

   a. flush sliding door
   b. overhead door
   c. 3 panel door
   d. double-acting flush door

2. How many overhead doors are to be used in this structure?

   a. 4
   b. 1
   c. 2
   d. 3

3. What size door is used for the linen closet?

   a. 2 - 3' - 01/2" x 6' 0" x 1"
   b. 2 - 2' -01/2" x 6' - 8' x 1
   c. 2' - 6" x 6' - 8" x 1 3/8"
   d. 3' - 0" x 6' - 8" x 1 3/4

4. How thick must the face veneer be on the flush doors?

   a. 1/8"
   b. 1/4"
   c. 1/20"
   d. 32"

5. How many different size doors are used in this structure?

   a. 16
   b. 10
   c. 15
   d. 14

70.02.05.02

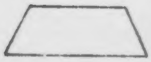
6. Which of the following describes the proper placement of double-hinge wedges on the hinge jamb?

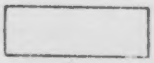
   a. One block 14" up from the bottom and one 8C down from the top.
   b. 1 block 11 in. up from bottom and 1 7 in. down from top and 1/3 between 2.
   c. 1 block 8C up from the bottom and 1 12" down from top and a third block.
   d. 1 block 12" up from bottom and 1 6" down from top and 1/3 block 6" below.

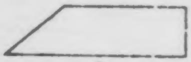
7. Which of the following items should be mortised into the door jamb?

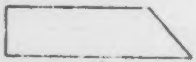
   a. latch
   b. bolt
   c. handle
   d. strike plate

8. Which of the following shapes would best represent the side of a door jamb?


a


b


c


d

9. When using hardwood door casing, it is advisable to:

   a. use contact cement.
   b. use 10D finish nails.
   c. drill the nail holes.
   d. use wood screws.

10. The item which is applied to each side of the door frame to cover the space between the jambs and the wall surface is called the:

   a. spreader.
   b. bridging.
   c. double-shingle wedges.
   d. door casing.

LAP TEST ANSWER KEY: MATERIALS FOR A DOOR INSTALLATION/DOOR JAMB

LAP 01

1. d
2. c
3. b
4. c
5. d

LAP 02

6. b
7. d
8. a
9. c
10. d

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

File Code: 70.02.05.03.A2-0

Date Published: 10/10/75

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Interior Door

OBJECTIVES:

Hang an interior door according to specifications and following procedures accepted in the industry. Identify characteristics of interior doors.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Hand saw (10 point)
Hinge mortise template
Power block plane or jointer
Panel saw
Router and mortising bit
Screwdriver
Tape measure (12 ft.)

PROCEDURE:

1. Obtain specifications for the door.
2. Read pages 20 and 21, Unit VI in Carpentry and/or pages 364-373 in Modern Carpentry.
3. Obtain the tools and materials needed to complete this job.
4. Hang the door.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

Check List: Interior Door

_______ Fastened properly.

_______ Neat.

_______ Plumb and level.

_______ Measurements are accurate to ± 1/8 inch.

_______ Procedures are accepted in the industry.

_______ Meets specifications.

Student: ______________________ File Code: 70.02.05.03.A2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: INTERIOR DOOR

1. Which of the following are the proper titles for the two basic door types?

   a. stile-and-rail and solid core
   b. hollow core and flush
   c. panel and flush
   d. panel and fiber core

2. To prevent air movement and reduce sound transmission, an interior door should be equipped with:

   a. a double spreader.
   b. a threshold.
   c. an apron.
   d. a sealing strip.

3. What size hinge butt is used on most interior doors?

   a. 2 1/4" x 2 1/4"
   b. 2" x 2"
   c. 3 1/2" x 3 1/2"
   d. 4" x 4"

4. The upper door hinges should be installed:

   a. 7" from the top of the door.
   b. 8" from the top of the door.
   c. 6" from the top of the door.
   d. 5" from the top of the door.

5. At what distance from the bottom of the door should the bottom door hinge be installed?

   a. 9"
   b. 6"
   c. 11"
   d. 13"

6. In modern construction, gains for hinges are usually cut with:

   a. a hand plane.
   b. an electric router.
   c. an electric plane.
   d. a cutoff saw.

7. At what height are door handles usually installed?

   a. 3'
   b. 2 1/2'
   c. 4'
   d. 3 1/2'

8. In order to set the door stop on the hinge jamb for a clearance of 1/16", the door should be:

   a. in any position.
   b. partially open.
   c. in the closed position.
   d. in the fully open position.

9. What is the minimum width recommended by the FHA for an interior door width?

   a. 2' 10" for bedrooms and 2' 6" for bathrooms.
   b. 3' 6" for bedrooms and 3' for bathrooms.
   c. 3' for bedrooms and 2' 6" for bathrooms.
   d. 2' 6" for bedrooms and 2' for bathrooms.

10. When mounting a door, the final trim member(s) installed is (are) the:

   a. door casing.
   b. head jamb and spreader.
   c. door stops.
   d. side jambs.

LAP TEST ANSWER KEY: INTERIOR DOOR

1. c
2. d
3. c
4. a
5. c
6. b
7. a
8. c
9. d
10. c

File Code: 70.02.05.04.A2-0

Date Published: 10/10/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Exterior Door

OBJECTIVES:

Hang an exterior door according to specifications and follow procedures accepted in the industry.

Identify characteristics of an exterior door.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Hand saw (10 point)
Hinge mortise template
Jointer
Panel saw
Router and hinge mortising bit
Screwdriver
Tape measure (12 ft.)

PROCEDURE:

1. Obtain specifications.
2. Read pages 20 and 21, Unit VI in Carpentry and/or pages 233-247 in Modern Carpentry.
3. Obtain the tools and materials needed to complete this job.
4. Hang the door.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

CHECK LIST: EXTERIOR DOOR

__________ Fastened properly.

__________ Neat.

__________ Plumb and level.

__________ Measurements are accurate to ± 1/8 inch.

__________ Procedures are accepted in the industry.

__________ Meets specifications.

Student: ______________________ **File Code:** 70.02.05.04.A2-2

Date: ______________________ **Date Published:** 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: EXTERIOR DOOR

1. The door stop on the hinge jamb is set for a clearance of:

   a. 1/16".
   b. 1/4".
   c. 1/32".
   d. 1/8".

2. The standard thickness for exterior doors is:

   a. 1 3/4".
   b. 2".
   c. 1 1/2".
   d. 1 1/4".

3. What must be done in order to position a standard door sill level with the finished floor?

   a. Do not install a spreader.
   b. Do not install a threshold.
   c. Remove section of rough floor and trim portion of top edge of floor.
   d. Remove a section of the rough floor.

4. When nailing door casings in place, they should be spaced:

   a. 14" O.C.
   b. 18" O.C
   c. 16" O.C.
   d. 12" O.C.

5. Why is the door stop on the hinge jamb set for a clearance of 1/16"?

   a. To provide support for the side jamb.
   b. To prevent the door from rubbing when open.
   c. To add structural beautification.
   d. To provide support for the hinge jamb.

6. In modern construction, gains for hinges are usually cut with:

   a. an electric router.
   b. a hand plane.
   c. an electric plane.
   d. a sabre saw.

7. The most common height of exterior doors used in residential construction is:

   a. 6' 8".
   b. 7' 2".
   c. 6' 6".
   d. 7' 0".

8. Which of the following width ranges is commonly used for exterior doors?

   a. 3' 0" - 3' 4"
   b. 2' 0" - 2' 6"
   c. 2' 6" - 2' 10"
   d. 2' 8" - 3' 0"

9. To support and/or straighten the side jambs of a door, a carpenter should use which of the following?

   a. double-shingle wedges
   b. heavier door hinges
   c. thicker side jambs
   d. support studs

10. In order to set the door stop on the hinge jamb for a clearance of 1/16", the door should be:

   a. in the closed position.
   b. partially open.
   c in the fully open position.
   d. in any position.

LAP TEST ANSWER KEY: EXTERIOR DOOR

1. a
2. a
3. c
4. c
5. b
6. a
7. a
8. d
9. a
10. a

File Code: 70.02.05.05.A2-0

Date Published: 10/10/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student:

Date:

PERFORMANCE ACTIVITY: Door Locks

OBJECTIVES:

Install a door lock according to specifications and following procedures accepted in the industry.

Identify characterisitics of locks and their installation.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Claw hammer
Combination square
Hole cutting bit
Power drill
Screwdriver (Phillips and slot)
Speed bit set

PROCEDURE:

1. Obtain specifications.
2. Read page 25, Unit VI in Carpentry and/or pages 370-374 in modern Carpentry.
3. Obtain the tools and supplies needed to complete this job.
4. Install the lock.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

CHECK LIST: DOOR LOCKS

__________ Fastened properly.

__________ Neat.

__________ Measurements are accurate to ± 1/32 inch.

__________ Procedures are accepted in the industry.

__________ Meets specifications.

Student: ____________________ File Code: 70.02.05.05.A2-2

Date: ____________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: DOOR LOCKS

1. Identify "hand of the door" type #3.

   a. left hand
   b. left hand reverse
   c. right hand
   d. right hand reverse

2. Which of the following lock sets are used extensively in modern residential work because of their easy and quick installation?

   a. unit and tubular
   b. cylindrical and mortise
   c. cylindrical and tubular
   d. unit and mortise

3. Which of the following lock sets identifies figure #3?

   a. unit lock set
   b. mortise lock set
   c. tubular lock set
   d. cylindrical lock set

4. Which of the following identifies "hand of the door" type #4?

   a. right hand reverse
   b. right hand
   c. left hand
   d. left hand reverse

5. Identify "hand of the door" type #1.

   a. left hand reverse
   b. right hand
   c. left hand
   d. right hand reverse

6. Which of the following identifies "hand of the door" type #2?

   a. right hand
   b. left hand reverse
   c. right hand reverse
   d. left hand

7. Which of the following identifies lock set #1?

   a. tubular lock set
   b. cylindrical lock set
   c. mortise lock set
   d. unit lock set

8. Lock set #2 is commonly known as a:

   a. unit lock set.
   b. mortise lock set.
   c. cylindrical lock set.
   d. tubular lock set.

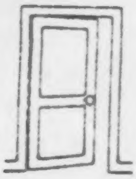
9. The center of a lock to be installed in a door should measure:

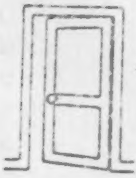
   a. 48" from the floor.
   b. 32" from the floor.
   c. 38" from the floor.
   d. 42" from the floor.

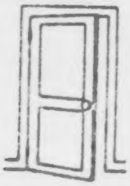
10. Which of the following identifies lock set #4.

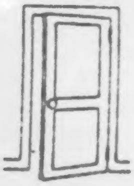
    a. cylindrical lock set
    b. unit lock set
    c. tubular lock set
    d. mortise lock set

DOOR TYPES

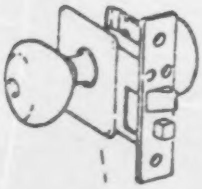

1

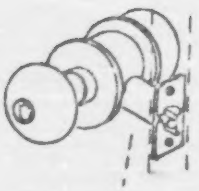

2

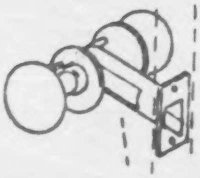

3

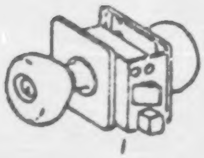

4

LOCK SETS


1


2


3


4

LAP TEST ANSWER KEY: DOOR LOCKS

1. d
2. c
3. c
4. d
5. b
6. d
7. c
8. c
9. c
10. b

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

File Code: 70.02.05.06.A2-0

Date Published: 10/10/75

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Bi-fold and By-pass Doors

OBJECTIVE:

Install bi-fold and by-pass doors according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Sliding Doors" LAP test and is taken after completing that LAP.

RESOURCES:

Modern Carpentry, Wagner.

Claw hammer
Combination square
Hack saw
Hand saw (10 point)
Nail set
Panel saw
Power saw, hand (6½" blade)
Power drill with bits
Radial saw
Screwdriver (Phillips & Slot)
Spirit level

PROCEDURE:

1. Obtain specifications.
2. Read pages 376-378 in Modern Carpentry.
3. Obtain the tools and materials needed to complete this job.
4. Install the door.
5. Have the installation evaluated
6. Clean up the area and put tools away.
7. Go to the next LAP.

Principal Author(s): R. Arneson

CHECK LIST: BY-FOLD AND BY-PASS DOORS

__________ Fastened properly.

__________ Neat.

__________ Plumb and level

__________ Adjusted to open and close properly.

__________ Measurements are accurate to ± 1/8 inch.

__________ Procedures are accepted in the industry.

__________ Meets specifications.

File Code: 70.02.05.07.A2-0

Date Published: 10/10/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________

Date: ____________

PERFORMANCE ACTIVITY: Sliding Doors

OBJECTIVE:

Install sliding doors according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Modern Carpentry, Wagner.

Claw hammer
Combination square
Power drill and bits
Screwdrivers (Phillips and slot)
Saw, panel
Saw, radial
Saw, power hand (6½" blade)
Saw, hand (10 point)

PROCEDURE:

1. Obtain specifications.
2. Read pages 374 and 375 in Modern Carpentry.
3. Obtain the tools and materials needed to complete this job.
4. Install the doors.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

CHECK LIST: SLIDING DOORS

____________ Fastened properly.

____________ Neat.

____________ Plumb and level.

____________ Measurements are accurate to ± 1/8 inch.

____________ Procedures are accepted in the industry.

____________ Meets specifications.

Student: ____________________ File Code: 70.02.05.06 & .07.A2-2

Date: ____________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: BI-FOLD AND BY-PASS DOORS/ SLIDING DOORS

70.02.05.06

1. Which of the following folding door units is made of fabrics and vinyl-coated materials attached to a metal framework?

   a. four-door type folding door
   b. two-door type folding door
   c. accordion-fold door
   d. "stack" type folding door

2. Two-door folding door units generally range from:

   a. 3 - 4 ft. wide.
   b. 2 - 3 ft. wide.
   c. 1 - 2 ft. wide.
   d. 4 - 5 ft. wide.

3. Pairs of doors hinged together are called:

   a. solid core doors.
   b. sliding doors.
   c. two panel colonial doors.
   d. folding doors.

4. At what height on a bifold door is a door pull secured?

   a. 3'
   b. 4'
   c. 3 1/2'
   d. 2 1/4'

5. Four-door folding door units generally range from:

   a. 4 - 7 ft. wide.
   b. 3 - 6 ft. wide.
   c. 2 - 5 ft. wide.
   d. 1 - 4 ft. wide.

70.02.05.06 (continued)

6. It is usually necessary to install heavier hardware and use a supporting roller-hanger instead of a regular center guide when the total opening for a four-door folding door unit is greater than:

   a. 4 ft.
   b. 10 ft.
   c. 6 ft.
   d. 8 ft.

70.02.05.07

7. What must be done if the track of a sliding door is mounted below the head jamb?

   a. Nothing.
   b. A trim strip must be installed to conceal the hardware.
   c. The height of a standard door must be increased in order to provide proper fit.
   c. The height of a standard door must be reduced and trim strip installed to conceal hardware.

8. How is sliding door hardware fastened on the sliding door?

   a. with screws, mortised flush
   b. with screws, recessed
   c. with screws, mortised inset
   d. with screws, surface mounted

9. The major disadvantage of bypass sliding doors is:

   a. their weight.
   b. their complicated hardware.
   c. the inability to gain access to the total opening at one time.
   d. their high cost.

10. At what height on a sliding door is a door pull fastened?

   a. 2 1/4'
   b. 3 1/2'
   c. 3'
   d. 4'

LAP TEST ANSWER KEY: BI-FOLD AND BY-PASS DOORS/ SLIDING DOORS

LAP 06

1. c
2. b
3. d
4. a
5. b
6. c

LAP 07

7. d
8. d
9. c
10. a

File Code: 70.02.05.08.A2-0

Date Published: 10/10/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ______________________

Date: ______________________

PERFORMANCE ACTIVITY: Door Section

OBJECTIVE:

Identify members of a typical door section.

EVALUATION PROCEDURE:

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Threshold" LAP test and is taken after completing that LAP.

RESOURCES:

Modern Carpentry, Wagner.

PROCEDURE:

1. Obtain specifications.
2. Read pages 364 and 365 in Modern Carpentry.
3. Go to the next LAP.

Principal Author(s): R. Arneson

File Code: 70.02.05.09.A2-0

Date Published: 10/10/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Door Trim

OBJECTIVES:

Trim a door according to specifications and follow procedures accepted in the industry.

Identify characteristics of door trim.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Threshold" LAP test and is taken after completing that LAP.

RESOURCES:

Modern Carpentry, Wagner.

Claw hammer
Combination square
Hand saw (10 point)
Miter box
Nail set

PROCEDURE:

1. Obtain specifications.
2. Read pages 361-365 in Modern Carpentry.
3. Obtain the tools and materials needed to complete this job.
4. Install door trim.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Go to the next LAP.

Principal Author(s): R. Arneson

CHECK LIST: DOOR TRIM

________ Fastened properly.

________ Neat.

________ Square.

________ Measurements are accurate to ± 1/32 inch.

________ Procedures are accepted in the industry.

________ Meets specifications.

File Code: 70.02.05.10.A2-0

Date Published: 10/10/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student:

Date:

PERFORMANCE ACTIVITY: Weatherstrip

OBJECTIVE:

Install weatherstrip according to specifications and follow procedures accepted in the industry.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successful completion of this LAP is determined by correctly answering 8 out of 10 items on a multiple-choice test that is combined with "Threshold" LAP test and is taken after completing that LAP.

RESOURCES:

Carpentry, Carpenters Printing Plant.
Modern Carpentry, Wagner.

Screwdrivers (Phillips and slot)
Tack hammer
Tinners shears
Utility knife

PROCEDURE:

1. Obtain specifications.
2. Read "Exterior Finish," Unit IV in Carpentry and/or pages 238-244 in Modern Carpentry.
3. Obtain the tools and supplies needed to complete this job.
4. Install the weatherstrip.
5. Have the installation evaluated.
6. Clean up the area and put tools and supplies away.
7. Go to the next LAP.

Principal Author(s):

R. Arneson

CHECK LIST: WEATHERSTRIP

_______ Fastened properly.

_______ Neat.

_______ Measurements are accurate to ± 1/8 inch.

_______ Procedures are accepted in the industry.

_______ Meets specifications.

File Code: 70.02.05.11.A2-0

Date Published: 10/10/75

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Learning Activity Package

Student: ____________________

Date: ____________________

PERFORMANCE ACTIVITY: Threshold

5

OBJECTIVE:

Install an exterior threshold according to specifications.

EVALUATION PROCEDURE:

Installation meets the criteria on the attached checklist.

Successfully complete at least 80% of the items on a multiple-choice test about this LAP.

RESOURCES:

Modern Carpentry, Wagner.

Claw hammer
Combination square
Hand saw (10 point)
Power drill and bits
Screwdrivers (Phillips and slot)

PROCEDURE:

1. Obtain specifications.
2. Read pages 238-244 in Modern Carpentry.
3. Obtain the tools and materials needed to complete this job.
4. Install the threshold.
5. Have the installation evaluated.
6. Clean up the area and put tools away.
7. Take the LAP test.

Principal Author(s): R. Arneson

CHECK LIST: THRESHOLD

______ Fastened properly.

______ Neat.

______ Square.

______ Measurements are accurate to ± 1/8 inch.

______ Procedures are accepted in the industry.

______ Meets specifications.

Student: ______________________ **File Code:** 70.02.05.08 - .11.A2-2

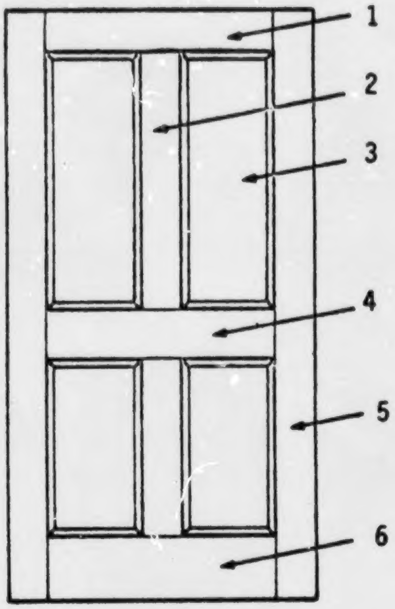
Date: ______________________ **Date Published:** 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

LAP TEST: DOOR SECTION/DOOR TRIM/WEATHERSTRIP/THRESHOLD

70.02.05.08

Refer to the illustration below for the following two (2) questions.



1. Which of the following items properly identifies item #4?

   a. mullion
   b. bottom rail
   c. lock or intermediate rail
   d. stile

2. Which of the following identifies item #6?

   a. stool
   b. bottom rail
   c. apron
   d. spreader

70.02.05.08 (continued)

3. A typical door is hung in which of the following?

   a. sill
   b. trimmer
   c. jamb
   d. header

4. Interior door jambs are usually:

   a. 3/4" thick.
   b. 1/4" thick.
   c. 1/2" thick.
   d. 7/8" thick.

70.02.05.09

5. Nails used for securing door casing should be:

   a. protruding.
   b. toenailed.
   c. flush.
   d. countersunk.

6. When nailing door casing in place, the nails should be spaced:

   a. 18" O.C.
   b. 16" O.C.
   c. 14" O.C.
   d. 12" O.C.

7. What size nails should be used to secure the door jamb to the cripple studs?

   a. 8D finish
   b. 10D finish
   c. 4D finish
   d. 6D finish

8. At what distance should the first nails be placed from the corners of the door casing?

   a. 4"
   b. 6"
   c. 2"
   d. as close to the corner as possible

70.02.05.10

9. To prevent excessive pressure on weatherstripping, the carpenter should use a:

   a. 1/2" spacer.
   b. 1/8" spacer.
   c. 1/32" spacer.
   d. 1/4" spacer.

70.02.05.11

10. When installing a threshold, the rubber gasket should be placed:

   a. in a manner as to be underneath both the threshold and side jambs.
   b. directly under the threshold.
   c. so it protrudes to the exterior portion of the threshold.
   d. so it protrudes to the interior portion of the threshold.

LAP TEST ANSWER KEY: DOOR SECTION/DOOR TRIM/WEATHERSTRIP/THRESHOLD

LAP 08

1. c
2. b
3. c
4. a

LAP 09

5. d
6. b
7. a
8. c

LAP 10

9. c

LAP 11

10. b

Student: ______________________ File Code 70.02.05.00.B2-2

Date: ______________________ Date Published: 8-20-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

UNIT POST TEST: DOORS AND JAMBS

70.02.05.01

The first five (5) questions refer to the plans in "Building Trades Blueprints for Carpenters."

1. The two general types of doors are:

    a. flush and panel.
    b. panel and fiber core.
    c. hollow core and flush.
    d. stile-and-rail and solid core.

2. What type of door adjoins the kitchen and dining room?

    a. double-acting flush door
    b. flush sliding door
    c. 3 panel door
    d. overhead door

3. What type of closet doors are designated to be used in the master bedroom?

    a. 3 panel door
    b. sliding door
    c. flush sliding door
    d. double acting flush door

4. What type of door is found in the rear of the garage?

    a. 3 light flush door
    b. flush batten door
    c. 3 panel door
    d. flush sliding door

5. How thick must the face veneer be on the flush doors?

    a. 1/8"
    b. 1/20"
    c. 1/4"
    d. 32"

70.02.05.02

6. The item which is applied to each side of the door frame to cover the space between the jambs and the wall surface is called the:

   a. bridging.
   b. double-shingle wedge.
   c. spreader.
   d. door casing.

7. Which of the following items should be mortised into the door jamb?

   a. strike plate
   b. bolt
   c. latch
   d. handle

8. Which of the following describes the proper placement of double-shingle wedges on the hinge jamb?

   a. 1 block 8" up from the bottom and 1 12" down from top and a third block.
   b. 1 block 12" up from bottom and 1 6" down from top and 1/3 block 6" below.
   c. One block 14" up from the bottom and one 8C down from the top.
   d. 1 block 11 in. up from bottom and 1 7 in. down from top and 1/3 between 2.

9. In order to receive the head jamb, the side jambs of a door are:

   a. tongue and grooved.
   b. dovetailed.
   c. dadoed.
   d. butted.

10. To minimize the tendency towards cupping (warping), the back side of a standard door jamb is usually:

   a. coped.
   b. kerfed.
   c. overlapped.
   d. mitered.

70.02.05.03

11. When mounting a door, the final trim members installed are the:

   a. side jambs.
   b. door casing.
   c. head jamb and spreader.
   d. door stops.

70.02.05.03 (continued)

12. What is the minimum width recommended by the FHA for an interior door width?

    a. 3' 6" for bedrooms and 3' for bathrooms.
    b. 2' 6" for bedrooms and 2' for bathrooms.
    c. 3' for bedrooms and 2' 6" for bathrooms.
    d. 2' 10" for bedrooms and 2' 6" for bathrooms.

13. The upper door hinges should be installed:

    a. 7" from the top of the door.
    b. 8" from the top of the door.
    c. 6" from the top of the door.
    d. 5" from the top of the door.

14. At what distance from the bottom of the door should the bottom door hinge be installed?

    a. 6"
    b. 9"
    c. 11"
    d. 13"

15. To prevent air movement and reduce sound transmission, an interior door should be equipped with:

    a. an apron.
    b. a sealing strip.
    c. a double spreader.
    d. a threshold.

70.02.05.04

16. When nailing door casing in place, they should be spaced:

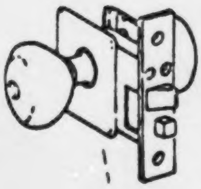
    a. 12" O.C.
    b. 16" O.C.
    c. 14" O.C.
    d. 18" O.C.

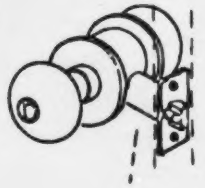
17. The standard thickness for exterior doors is:

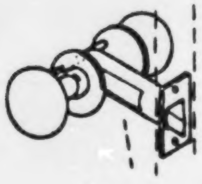
    a. 1 1/4".
    b. 2".
    c. 1 3/4".
    d. 1 1/2".

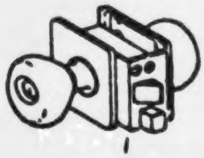
ILLUSTRATIONS FOR ITEMS 21 - 25.

LOCK SET

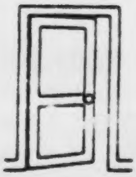

1

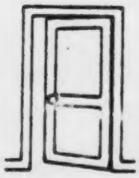

2

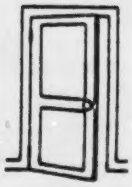

3

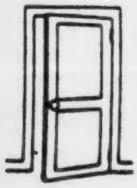

4

DOOR SET


1


2


3


4

70.02.05.04 (continued)

18. The trim required by an exterior door which seals the space between the bottom of the door and the door sill is the:

    a. threshold.
    b. sole.
    c. spreader.
    d. apron.

19. Which of the following width ranges is commonly used for exterior doors?

    a. 3' 0" - 3' 4"
    b. 2' 0" - 2' 6"
    c. 2' 6" - 2' 10"
    d. 2' 8" - 3' 0"

20. The door stop hinge jamb is set for a clearance of:

    a. 1/4".
    b. 1/16".
    c. 1/8".
    d. 1/32".

70.02.05.05

21. Which of the following identifies lock set #4?

    a. tubular lock set
    b. cylindrical lock set
    c. unit lock set
    d. mortise lock set

22. Identify "hand of the door" type #3.

    a. left hand
    b. left hand reverse
    c. right hand reverse
    d. right hand

23. Which type of lock is installed in an open cutout in the edge of a door and does not require disassembly during installation?

    a. mortise
    b. cylindrical
    c. unit
    d. tubular

70.02.05.05 (continued)

24. Which of the following identifies lock set #1?

    a. cylindrical lock set
    b. tubular lock set
    c. mortise lock set
    d. unit lock set

25. Which of the following identifies "hand of the door" type#2?

    a. left hand
    b. right hand reverse
    c. right hand
    d. left hand reverse

70.02.05.06

26. It is usually necessary to install heavier hardware and use a supporting roller-hanger instead of a regular center guide when the total opening for a four-door folding door unit is greater than:

    a. 6 ft.
    b. 8 ft.
    c. 4 ft.
    d. 10 ft.

27. Two-door folding door units generally range from:

    a. 1 - 2 ft. wide.
    b. 3 - 4 ft. wide.
    c. 4 - 5 ft. wide.
    d. 2 - 3 ft. wide.

28. Pairs of doors hinged together are called:

    a. folding doors.
    b. solid core doors.
    c. two panel colonial doors.
    d. sliding doors.

70.02.05.07

29. How is sliding door hardware fastened on the sliding door?

    a. with screws, mortised inset
    b. with screws, mortised flush
    c. with screws, surface mounted
    d. with screws, recessed

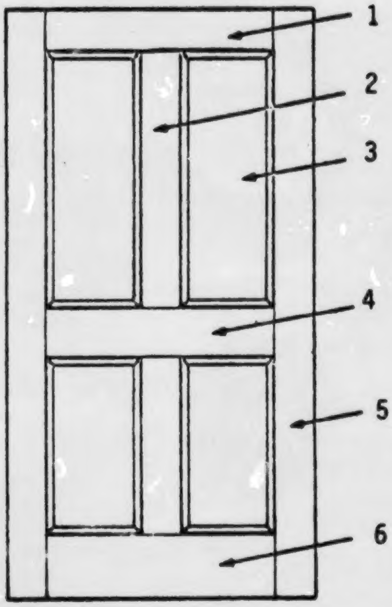
70.02.05.07 (continued)

30. What must be done if the track of a sliding door is mounted below the head jamb?

    a. Nothing.
    b. The height of a standard door must be reduced and a trim strip installed to conceal the hardware.
    c. The height of a standard door must be increased in order to provide proper fit.
    d. A trim strip must be installed to conceal the hardware.

70.02.05.08

Refer to the illustration below for the following three (3) questions.



31. Identify item #1.

    a. stile
    b. lock or intermediate rail
    c. mullion
    d. top rail

70.02.05.08 (continued)

32. Which of the following identifies item #2?

    a. mullion
    b. top rail
    c. stool
    d. stile

33. Which of the following identifies item #6?

    a. apron
    b. spreader
    c. bottom rail
    d. stool

34. A typical door is hung in which of the following?

    a. header
    b. sill
    c. trimmer
    d. jamb

35. Interior door jambs are usually:

    a. 1/2" thick.
    b. 3/4" thick.
    c. 1/4" thick.
    d. 7/8" thick.

70.02.05.09

36. What is the approximate reveal required when installing interior door trim?

    a. 1/8"
    b. 3/16"
    c. 1/16"
    d. 1/32"

37. What size nails should be used to secure the door jamb to the cripple studs?

    a. 6D finish
    b. 8D finish
    c. 4D finish
    d. 10D finish

70.02.05.09 (continued0

38. Which of the following is the most common type of door casing?

    a. quarter round
    b. cove
    c. teardrop
    d. crown

39. At what distance should the first nails be placed from the corners of the door casing?

    a. 4"
    b. as close to the corner as possible
    c. 6"
    d. 2"

40. Nails used for securing door casing should be:

    a. countersunk.
    b. flush.
    c. protruding.
    d. toenailed.

70.02.05.10

41. The corners of weatherstrip should be:

    a. spaced.
    b. butted.
    c. mitered.
    d. overalapping.

42. To prevent excessive pressure on weatherstripping, the carpenter should use a:

    a. 1/8" spacer.
    b. 1/2" spacer.
    c. 1/4" spacer.
    d. 1/32" spacer.

70.02.05.11

43. A threshold is placed under which of the following door types?

    a. exterior
    b. sliding
    c. folding
    d. interior

70.02.05.11 (continued)

44. What is the function of a threshold?

    a. Weatherproofs the exterior door.
    b. Supports door moulding.
    c. Takes up space left by a short door.
    d. Weatherproofs an interior door.

45. When installing a threshold, the rubber gasket should be placed:

    a. so it protrudes to the exterior portion of the threshold.
    b. directly under the threshold.
    c. so it protrudes to the interior portion of the threshold.
    d. in such a manner as to be underneath both the threshold and the side jamb.

UNIT POST TEST ANSWER KEY: DOORS AND JAMBS

LAP 01

1. a
2. a
3. c
4. a
5. b

LAP 02

6. d
7. a
8. d
9. c
10. b

LAP 03

11. d
12. b
13. a
14. c
15. b

LAP 04

16. b
17. c
18. a
19. d
20. b

LAP 05

21. c
22. c
23. c
24. c
25. a

LAP 06

26. a
27. d
28. a
29. c

LAP 07

30. b

LAP 08

31. d
32. a
33. c
34. d
35. b

LAP 09

36. b
37. b
38. c
39. d
40. a

LAP 10

41. c
42. d

LAP 11

43. a
44. a
45. b

Student: ______________ File Code: 70.02.05.00.A1-5

Date: ______________ Date Published: 11-12-74

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Family Pay Number: __________ Sex: M F (Circle 1)

UNIT PERFORMANCE TEST: DOORS AND JAMBS

OBJECTIVE:

Given a blueprint and materials, the student will be able to hang an interior door.

TASK:

Given a blueprint and materials, hang an interior door. Install hardware and trim as needed.

ASSIGNMENT:

CONDITIONS:

The student will be allowed to use all tools and equipment commonly found in a typical carpenter shop. He will be allowed to use reference materials listed. However, he will not be allowed to obtain assistance from any other student or the instructor. Also, he will complete the job in the time specified by the instructor.

RESOURCES:

(See attached sheet)

RESOURCES:

Claw hammer
Tape measure
Level
"T" bevel square
Combination square
Hand saw
Block plane
Slot screwdriver
Power hand saw
Power plane
Drill
Sander
Radial saw
Jointer
Router
Phillips screwdriver
Assortment of fastners and lumber

Mountain-Plains Education &
Economic Development
Program, Inc.
Glasgow AFB, Montana 59231

Student: ____________________ File Code: 70.02.05.00.A1-5

Date: ____________________ Date Published: 11-12-74

Family Pay Number: __________ Sex: M F (Circle 1)

PERFORMANCE CHECKLIST:

OVERALL PERFORMANCE: Satisfactory_____ Unsatisfactory_____

	CRITERION Met	 Not Met
Objective 1:		
1. Uses proper materials.		
Criterion: Meets specifications and FHA standards.		
2. Uses tools and equipment safely.		
Criterion: No injury to student or damage to equipment		
occurs.		
3. Properly assembled.		
Criterion: Blueprint specifications.		
4. Student completes job in a reasonable length of time.		
Criterion: Not to exceed 4 hours.		
5. Accurate measurement.		
Criterion: To ± 1/16".		
6. Plumb, square, and level when appropriate.		
Criterion: To ± 1/16".		
7. Hardware is properly installed.		

	CRITERION	
	Met	Not Met
Criterion: Manufacturer's specifications.		
8. Door margin is appropriate.		
Criterion: To 3/32 of an inch ± 1/64".		
To obtain an overall score of satisfactory student must meet		
criterion of 7/8 line items.		